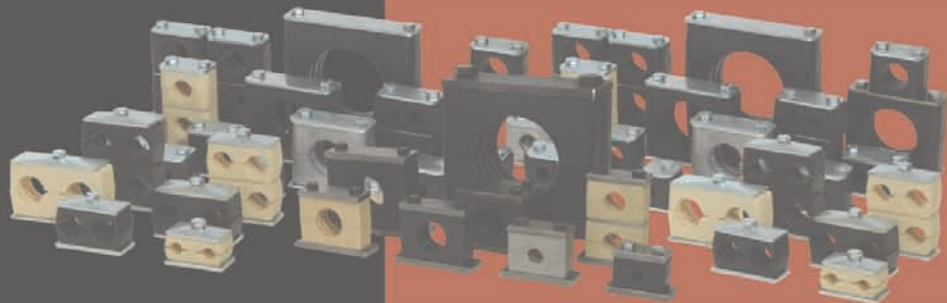




BEHRINGER®

Pipe Supports for Industrial Applications



Introduction

Thank you for choosing Behringer, the world's leading manufacturer of Pipe and Tube supports. Behringer has been manufacturing pipe clamps and support systems for over 30 years, and has developed a reputation in the industrial and sanitary markets that is second to none. We have made developments and product improvements over the years both strengthening and broadening our product offering. This is evident in the breadth of our line and ability to accommodate new applications and designs. You can count on Behringer for all your clamping requirements.

Product

Behringer Industrial Pipe and Tube Supports have natural vibration-dampening characteristics. This is important in pressure piping in order to reduce vibration, noise, and shock. This will effectively protect the system and its sensitive components from the damaging effects of these adverse system byproducts typically found in pressure piping systems.

Behringer offers many different series and within each series there are many different configurations available. We offer options for mounting such as welding, bolting, rail and strut mounting, double, and group mounting, etc. Behringer always welcomes a challenge, and would be happy to work with you to design a product that is custom-tailored to your application. This is where many of our developments are first generated, and helps to further progress the complexity of our product. Challenge us with your requirements.

Guarantee

Behringer Corporation, hereinafter called the "MANUFACTURER", guarantees that this product shall be free from defects in workmanship and materials. THIS GUARANTEE IS IN LIEU OF ALL OTHER GUARANTEES EITHER EXPRESSED OR IMPLIED, INCLUDING GUARANTEES FOR FITNESS FOR PURPOSE INTENDED. The MANUFACTURER'S liability is limited to the replacement of any materials which, after inspection by the MANUFACTURER at its sole option, are found to be defective. The MANUFACTURER will honor only those claims that are presented to it within one hundred eighty (180) days of the delivery of the materials to the purchaser. The MANUFACTURER SPECIFICALLY DISCLAIMS ANY AND ALL LIABILITY FOR CONSEQUENTIAL DAMAGES. The MANUFACTURER shall not be liable for any damages which arise out of the misuse or abuse of the products.

Applications

Behringer clamps are used in many different types of applications ranging from low pressure lubrication and water systems to high pressure hydraulic and process systems. Anywhere that there are pipes, tubes, or hoses is a viable application for Behringer clamps. Behringer clamps are used in the following markets and applications most frequently.

Mobile Equipment
Mining Equipment
Offshore and Marine Applications
Shipbuilding
Instrumentation
Nuclear
General Construction
Electrical / Mechanical Contracting
Process Piping
Pharmaceutical / Biotechnology
Food and Dairy
Beverage

Power Generation
Pulp and Paper
Industrial Hydraulics
Power Units
Agricultural Equipment
OEM Machinery

Assistance

Behringer Corporation has a competent and highly skilled staff of inside sales and customer service personnel available to assist you with any of your needs. Behringer can be reached in the following ways.

Post Mail:	Behringer Corporation 17 Ridge Road Branchville, NJ 07826
Telephone:	+1 (973) 948-0226
Fax:	+1 (973) 948-2562
Email:	cserv@behringersystems.com

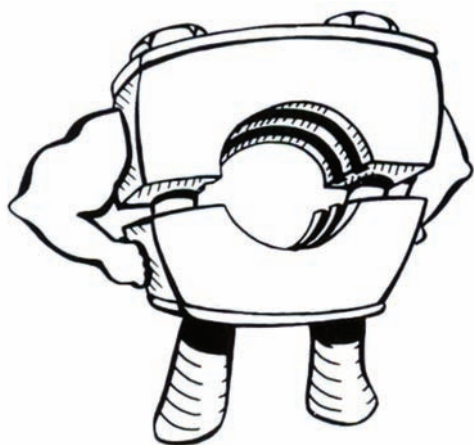
Our regular business hours are Monday through Friday, 8AM - 5 PM Eastern Time. For after-hours service, please contact your regional sales manager.

Please Read

The information contained in this document is provided as an aid in properly selecting products and/or options. It is intended to be used by technically experienced users for general reference only. The supplier assumes no responsibility or liability for the accuracy or completeness of this document, as well as results obtained by the use of this information. Due to the variety of possible operating conditions, it is highly recommended that the user make their own tests to determine the safety and suitability of all products and combinations thereof. The user is solely responsible for final determination of such conditions.

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Pipe Clamp Selection

Behringer's pipe clamps are available with many different mounting configurations and arrangements. In choosing a pipe clamp, there are five required pieces of information; series, size, clamp pair material, hardware material, and mounting / hardware configuration.

Series Selection

In order to select the proper clamp, the first thing that must be determined is the series of clamp to be used. Refer to pages 4-5 on Series Specifications to see what clamp series are available, as well as the technical characteristics of those series. The most important factors to be considered are the operating pressure of the line to be secured, the weight being supported, and the dynamic load. Other considerations include size, environment, and application. For example, a 1" Pipe for a hydraulic system operating at 2,000 psi would typically require the use of the standard series, but the heavy series may be selected if it will be required to support the weight of a large filter or other system component. Maximum weight loads and shearing forces can be found in the technical appendix. Also, the heavy series might be selected rather than the standard series if the line is on a piece of mining or mobile equipment that may see a very high amount of impact with other equipment or materials such as stones and metals. In Fig. 1 below, you can see the suggested operating pressures by series. These suggested values take into consideration the shock and vibration that a typical hydraulic system operating at these pressures can deliver.

Fig. 1: General Pressure Guidelines by Series

Series	Suggested Operating Pressure
Standard	up to 2000 psi
Heavy	5000 psi for single heavy/10,000 psi for double
Twin	up to 1500 psi
Heavy 4	5000 psi for single heavy/10,000 psi for double

Size

The next important factor in the selection of the pipe clamp is the size of the line to be secured. Behringer clamps use a modular group size that consists of multiple OD sizes being available within the same group. Clamps are listed as pipe or tube sizes. The difference is in the standard measurements used to rate pipe and tubing sizes. Pipe is rated by the inside diameter, and will have a larger outside diameter because of the wall thickness. For example, a 1 in. pipe has an OD of 1.315. This is a standard pipe OD size and is consistent of all hydraulic pipe, regardless of schedule. Tubing, on the other hand, is rated by the outside diameter. Therefore, a 1 in. tube will have an OD of 1.00 in. This is important in determining the size of the pipe clamp that will be selected. Also, the size may determine the series of clamp selected. For example, a low pressure line operating at 1,500 psi that is 6 inch pipe size is not available in the Standard Series, therefore the Heavy Series must be used.

Clamp Pair Material

The clamp pair material is the next thing that should be selected. Behringer's clamp pairs are offered in different materials; Polypropylene (PP), Santoprene (SP), Aluminum (AL), HDPE (NN), and High Temperature Cast Nylon (HT). The single most important determining factor of clamp pair material is operating temperature. The temperature ratings and other important specifications can be found in the technical appendix. Some materials are not available in all sizes or all series. Refer to the specific clamp pair selection charts from each series to see what is available in the required size. Other considerations for materials are compatibility with the environment and for aesthetic reasons or color.

Hardware Material

Once you have determined the series of pipe clamp and the size that is required, the next step is to determine the hardware materials that you will require. In the series specification pages (page 4 - 5), you will see that each series has a standard hardware material type. See Fig. 2 for standard hardware choices. The standard hardware is either plain carbon steel or zinc-plated steel. All Behringer clamps that are zinc-plated use a trivalent blue zinc plating, which is more environmentally friendly than typical hexavalent zinc plating, and is RoHS compliant. In addition to the standard hardware choices, Behringer offers stainless steel in 2 grades from stock. AISI 304 Stainless Steel (A2 - 1.4301/1.4305) is used in applications where stainless steel is required. This may be in an outside environment, because of chemical compatibility reasons, or because of requirements from the FDA or other regulatory committee. AISI 316 Ti Stainless Steel (A4 - 1.4401/1.4571) is a high grade stainless steel. The 316 Stainless is used in applications where it will come in contact with salt water or air with a high salt concentration such as offshore or marine applications.

Fig. 2: Standard Hardware Material by Series

Series	Code	Material
Standard	Z	Zinc Plated Steel
Heavy	C	Unplated Carbon Steel
Twin	Z	Zinc Plated Steel
Heavy 4	C	Unplated Carbon Steel

Mounting / Hardware Configuration

Behringer offers a multitude of mounting configurations and arrangement styles. Clamps can be mounted to the support structure by either welding, bolting, rail-mounting, strut mounting, or stanchion and special securing plates. In addition, clamps can be stacked on top of each other, suspended from threaded rods, or any number of double and group positions can be made on multiple clamp weld plates, called Group Weld Plates (GRW). These options are not available for every series. Please check the ordering code for available mounting and hardware configurations. Here you can see examples of these mounting types.



Weld Mounting [STW, SWP, TWP]

Clamps are supplied with a weld plate for welding directly to the support structure. This is the most common form of clamp mounting, and is available in all series of pipe clamps. It is typically used with a cover plate and bolts, and is a commonly stocked item.

Standard Series:	STW
Heavy Series:	SWP / DWP
Twin Series:	TWP
Heavy 4 Series:	SWP / DWP



Bolt Mounting with Base Plates [BAP]

Clamps are supplied with a base plate for applications where the clamp cannot be welded into position. This is commonly used to mount the clamps to non-metallic surfaces such as wood or drywall. However, base plates can be welded into position if required. Base plates are only available in the standard series, and are available from stock.



Multiple Clamp Weld Plates [DOW, GRW]

For multiple lines, Behringer offers double weld plates or group weld plates. The double weld plates create a double clamp that enjoys the convenience of welding only one plate, but the strength and durability of using standard series hardware with individual clamp halves and 4 hex bolts. Group weld plates can accommodate between 3-10 positions, depending on the application. This is beneficial for keeping a tightly regimented center distance on the piping or tubing where multiple lines are run along the same plane. For both the double and group weld plates, all clamps to be fitted to the same plate must be within the same hardware group size.



Rail Mounting [RCN, RAL]

Rail mounting makes installation of multiple lines of different group sizes an easy task. All clamps within one series can be mounted directly to a single channel using rail nuts that are designed for that rail. Behringer also makes proprietary rails that can accept the weld plates rather than the rail nuts [RCN]. The rail uses are as follows.

RAL-0	Standard and Twin Series Clamps with RCN-0 (standard) / RCN-T0 (twin)
RAL-1	Standard and Twin Series with STW or RCN-1 (standard) / RCN-4 (twin)
RAL-2	Heavy Series Clamps with SWP (H3-H5)
RAL-3	Heavy Series Clamps with SWP (H6)
RAL-4	Heavy Series Clamps with RCN



Strut Mounting [UCN]

Behringer clamps can also be supplied with strut nuts [UCN] for mounting to standard strut channel. The new spring-loaded nuts are adaptable to any strut channel that is 1-5/8" wide. The depth of the channel is not important, as the UCN clips attach with a spring loaded tension on the top of the channel. Strut adaptation is available for all series of pipe clamps.



Stacking Kits

Stacking kits consist of a set of clamp halves, stacking bolts, and a safety plate. A stacking kit is everything that is needed to take an existing clamp and make it one level taller. You use the hardware from the existing clamp; remove the cover plate, clamp halves, and hex bolts from the existing clamp, insert the stacking kit onto the bottom fixture (weld plate, rail nuts, etc...), and then replace the existing clamp hardware on top. Multiple stacking kits can be added to increase the number of clamps stacked on top of each other. Stacking kits are available in all series.

Vibration-Dampening Pipe Clamps

Behringer's vibration-dampening pipe clamps are manufactured in different series for use in many different applications. The core range of pipe clamps encompasses Standard Series, Heavy Series, and Twin Series. They meet ASTM, Shipbuilding, Nuclear, Coast Guard, and other specifications.

In addition to these main types of pipe clamps, Behringer also manufactures other clamping components and hardware. For large diameter pipes, Behringer's patented Heavy Four Series offers unparalleled performance in securing and vibration dampening, as well as electrical isolation of piping from support structure. We offer plastic saddle clamps and U-bolts as well. Behringer has its roots in the metal fabrication business, and we can easily manufacture customer-specific fabricated metal or injection molded products. We currently manufacture many other items for OEMs that are specially designed for that specific customer. We work closely with key personnel in the research and design stages, and can make prototypes in a very short time. Let us know what we can do for you.



Heavy Series Pipe Clamps

Range: 0.25 in. (6.4 mm) through 8.625 in. (219 mm)

Pressure: 5,000 to 10,000 psi

Material: Plain Carbon Steel, 304SS, 316SS, Zinc Plated

Clamp Halves: Polypropylene, Santoprene, Aluminum

Heavy series pipe clamps can withstand the shock and vibration that a hydraulic system operating at up to 5,000 psi can deliver. With the use of our Double Heavy design, lines with operating pressure of up to 10,000 psi can be accommodated. Standard hardware material is unplated carbon steel. Also available from stock are 304 SS and 316 SS hardware. The heavy series can be mounted using a weld plate, rails, and stacking kits. Many other options are possible with existing hardware, and custom arrangements are always a possibility.



Standard Series Pipe Clamps

Range: 0.25 in. (6.4 mm) through 4 in. (102 mm) OD

Pressure: 2,000 psi maximum

Material: Zinc-plated, 304SS, 316SS

Clamp Halves: Polypropylene, Santoprene, Aluminum

Standard series pipe clamps can withstand the shock and vibration that a hydraulic system operating at up to 2,000 psi can deliver. Standard hardware is zinc-plated steel, unless otherwise noted. Also available from stock are 304 SS and 316 SS hardware. The standard series is offered in a multitude of configurations, such as weld-mounting, bolt-mounting, rail mounting, stacking, double weld-mounting, and group weld-mounting. Many other options are possible with existing hardware, and custom arrangements are always a possibility.



Twin Series Pipe Clamps

Range: 0.25 in. (6.4 mm) through 1.66 in. (42 mm)

Pressure: 1,500 psi maximum

Material: Zinc Plated, 304SS, 316SS, Plain Carbon Steel

Clamp Halves: Polypropylene, Santoprene

The twin series is an excellent choice where multiple lines are required, while keeping a close center distance between the lines. Twin series pipe clamps can withstand the shock and vibration that a hydraulic system operating at up to 1,500 psi can deliver. Twin series hardware material is zinc-plated steel. Also available from stock are 304 SS and 316 SS hardware. The twin series can be mounted using a weld plate, rails, and stacking kits. Many other options are possible with existing hardware, and custom arrangements are always a possibility.

Pipe Clamps



Heavy 4 Series Pipe Clamps

Range: 8.625 in. (219 mm) through 30 in. (762 mm) OD

Pressure: 5,000 psi to 10,000 psi

Material: Un-plated Carbon Steel, 304SS, 316SS, Zinc-Plated

Clamp Halves: Polypropylene
Others on request

Behringer's patented Heavy 4 Series pipe clamps are unrivaled in design and performance. Our clamps feature a unique 4-segmented plastic design which retains dimensional accuracy, resists stress and impact, absorbs vibration, and accomplishes a strong plastic-to-metal contact interface. This segmented plastic design is complemented by substantial steel support hardware.

Heavy 4 Series pipe clamps can withstand the shock and vibration that a hydraulic system operating at up to 5,000 psi can deliver, and with the use of our double heavy design they can accommodate lines with pressures up to 10,000 psi. Standard hardware is a low carbon steel. Also available are 304 SS and 316 SS as well as zinc-plated hardware. The Heavy 4 Series is only offered as a weld-mounted clamp.



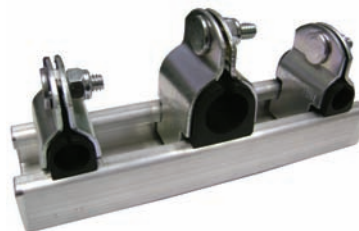
Saddle Series Pipe Clamps

Range: 0.84 in. (21 mm) through 30 in. (762 mm)

U-Bolt Material: Zinc Plated, 304SS, 316SS, Plain Carbon Steel

Saddle Material: Polypropylene, UHMW

The Saddle Series pipe clamps consist of a heavy duty plastic saddle, and a U-bolt with 4 hex nuts. The saddle series allows for movement due to vibrations and thermal expansion and contraction. The plastic saddle eliminates the metal-to-metal contact of the piping from the support structure, preventing costly damage to pipe installations. Behringer's Saddle Series clamps are typically used in shipbuilding, offshore and marine vessels, chemical plants, or wherever large diameter, low pressure piping is installed. Behringer's saddle clamps are available in 2 different designs; Long Saddle and Short Saddle. The Long Saddle (shown above) extends past the u-bolt legs, and has holes for the legs to be inserted into. The Short Saddle does not extend to the u-bolts, and sits on the support structure or is held in place with location nipples.



Cushioned Pipe Clamps

Range: 0.25 in. (6.4 mm) through 6.625 in. (168 mm) OD

Pressure: Low pressure

Material: Zinc-Plated, 304SS, 316 SS

Clamp Insert: Thermoplastic Elastomer

Behringer's new line of cushioned clamps are designed for low pressure applications such as conduit, water, waste, and other non or low pressure lines. They easily mount to standard strut channels that are available in almost every industrial and many mobile applications. The standard hardware material is zinc-plated steel. Also available are 304 SS and 316 SS hardware. The cushion is manufactured from a thermoplastic elastomer material that is designed to reduce vibration and noise, while providing constant reliability in operating temperatures to 275 degrees F.



Custom Pipe Clamps

Range: Any

Pressure: Any

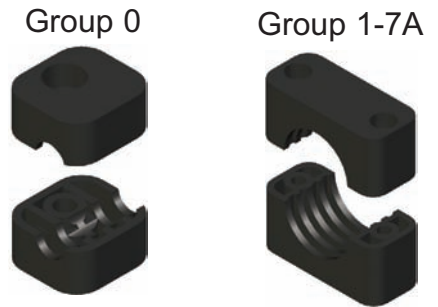
Material: Any

Clamp Insert: Any

Customization is an easy task for Behringer's vast experience in custom metal fabrication and injection molding. If you have ideas about a custom-made product, we can easily and quickly take concepts and turn them into prototypes and ultimately production items. Behringer currently manufactures custom products for major OEM manufacturers in the mobile, offshore, industrial, and construction markets. Some custom items are a variation of a standard item, and others are completely different from our cataloged items. Let Behringer work for you to help resolve any of your fastening or clamping requirements.

Clamp Pair Selection

Behringer's clamp pairs are available in different materials and incorporate a modular insert by group size. Standard series pipe clamps are available in sizes from 1/4 in. (6.35mm) through 4-1/4 in. (114.3mm) OD Sizes.



Clamp Pair Selection and Part Numbers

Behringer Group	Pipe Size	Tube Size	Metric OD (mm)	Imperial OD (Inch)	Clamp Pair P/N (See material code for *)
0		1/4	6.4	0.250	ST-CLH-00-*-025
		3/8	9.5	0.375	ST-CLH-00-*-038
	1/8		10.0	0.405	ST-CLH-00-*-041
		1/2	12.7	0.500	ST-CLH-00-*-050
		5/8	16.0	0.620	ST-CLH-00-*-062
1		1/4	6.4	0.250	ST-CLH-01-*-025
			8.0	0.315	ST-CLH-01-*-032
		3/8	9.5	0.375	ST-CLH-01-*-038
	1/8		10.0	0.405	ST-CLH-01-*-041
			12.0	0.472	ST-CLH-01-*-047
2		3/8	9.5	0.375	ST-CLH-02-*-038
		1/2	12.7	0.500	ST-CLH-02-*-050
	1/4		14.0	0.540	ST-CLH-02-*-054
			15.0	0.591	ST-CLH-02-*-059
		5/8	16.0	0.620	ST-CLH-02-*-062
	3/8		17.1	0.675	ST-CLH-02-*-068
3			18.0	0.709	ST-CLH-03-*-071
		3/4	19.0	0.750	ST-CLH-03-*-075
	1/2		21.3	0.840	ST-CLH-03-*-084
		7/8	22.2	0.870	ST-CLH-03-*-087
		1	25.4	1.000	ST-CLH-03-*-100
4	3/4		26.7	1.050	ST-CLH-04-*-105
		1 1/8	28.6	1.125	ST-CLH-04-*-112
5		1 1/8	28.6	1.125	ST-CLH-05-*-113
		1 1/4	32.0	1.250	ST-CLH-05-*-125
	1		33.4	1.315	ST-CLH-05-*-132
		1 1/2	38.1	1.500	ST-CLH-05-*-150
	1 1/4		42.2	1.660	ST-CLH-05-*-166
6		1 3/4	44.5	1.750	ST-CLH-06-*-175
	1 1/2		48.3	1.900	ST-CLH-06-*-190
		2	50.8	2.000	ST-CLH-06-*-200
7		2 1/4	57.2	2.250	ST-CLH-07-*-225
	2		60.3	2.375	ST-CLH-07-*-238
	2 1/2		73.0	2.875	ST-CLH-07-*-288
		3	76.2	3.000	ST-CLH-07-*-300
	3	3 1/2	88.9	3.500	ST-CLH-07-*-350
7A		4	102.0	4.000	ST-CLH-7A-*-400
	4	4 1/2	114.3	4.500	ST-CLH-7A-*-450

Clamp Pair Material Codes (*)

P	[PP] Polypropylene Black Color
S	[SP] Santoprene Beige Color
A	[AL] Aluminum Aluminum Color

Custom Sizes

Custom sizes can be made by specially boring the clamp pair to any desired size. To order a special size, first find the group that this will fall under. All groups are available starting with 1/4 in. OD and can be used up to the maximum OD size in the chart below. This is expressed in the part number as a two-digit number (G#). Once you have determined your group size, simply add the desired OD of the line to be secured in the 3 digit end number of the clamp pair (XXX) by rounding the number to two decimals and dropping the decimal point. The part number will look like this:
ST-CLH-G#-*-XXX

Example: For a line with OD of 1.08 in., this would fall within the group 4. The Part number will be as follows:
ST-CLH-04-*-108

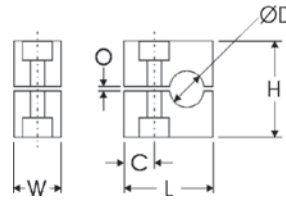
Special Bore Range by Group

Group (G#)	Range
00	0.25 in through 0.620 in.
01	0.25 in through 0.405 in.
02	0.25 in through 0.675 in.
03	0.25 in through 1.000 in.
04	0.25 in through 1.125 in.
05	0.25 in through 1.660 in.
06	0.25 in through 2.000 in.
07	0.25 in through 3.240 in.
7A	0.25 in through 4.500 in.

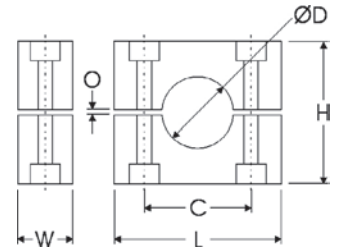
Clamp Pair Dimensions

Dimensions for the clamp pairs can be found at the right and in the chart below. As a general rule of thumb, the outside diameter of the line to be secured should not vary over or under the ØD dimension in the chart by more than ½ of the tension clearance dimension, or no more than 0.015 in. If an acceptable size is not available, custom sizes can be made to order.

Group 0



Group 1-7A



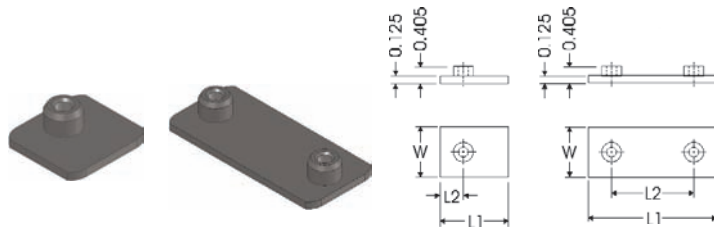
Clamp Pair Dimensional Information

Behringer Group	Metric ØD (mm)	Imperial ØD (Inch)	Clamp Pair P/N (See page 1 for complete order numbers)	L	W	H	O	C	Weight Ea.
0	6.40	0.250	ST-CLH-00-*-025	1.125 in. (28.6 mm)	1.219 in. (31mm)	1.125 in. (28.6 mm)	0.031 in. (0.8 mm)	0.375 in. (9.5 mm)	0.02 lbs
	9.50	0.375	ST-CLH-00-*-038						
	10.00	0.405	ST-CLH-00-*-041						
	12.70	0.500	ST-CLH-00-*-050						
	16.00	0.620	ST-CLH-00-*-062						
1	6.40	0.250	ST-CLH-01-*-025	1.375 in. (35 mm)	1.219 in. (31mm)	1.375 in. (35 mm)	0.031 in. (0.8 mm)	0.790 in. (20 mm)	0.03 lbs
	8.00	0.315	ST-CLH-01-*-032						
	9.50	0.375	ST-CLH-01-*-038						
	10.00	0.405	ST-CLH-01-*-041						
	12.00	0.472	ST-CLH-01-*-047						
2	9.50	0.375	ST-CLH-02-*-038	1.625 in. (42 mm)	1.219 in. (31mm)	1.375 in. (35 mm)	0.031 in. (0.8 mm)	1.020 in. (26 mm)	0.04 lbs
	12.70	0.500	ST-CLH-02-*-050						
	14.00	0.540	ST-CLH-02-*-054						
	15.00	0.591	ST-CLH-02-*-059						
	16.00	0.620	ST-CLH-02-*-062						
	17.10	0.675	ST-CLH-02-*-068						
3	18.00	0.709	ST-CLH-03-*-071	1.875 in. (48 mm)	1.219 in. (31mm)	1.375 in. (35 mm)	0.031 in. (0.8 mm)	1.300 in. (33 mm)	0.05 lbs
	19.00	0.750	ST-CLH-03-*-075						
	21.30	0.840	ST-CLH-03-*-084						
	22.20	0.870	ST-CLH-03-*-087						
	25.40	1.000	ST-CLH-03-*-100						
4	26.70	1.050	ST-CLH-04-*-105	2.250 in. (57 mm)	1.219 in. (31mm)	1.625 in. (42 mm)	0.031 in. (0.8 mm)	1.580 in. (40 mm)	0.06 lbs
	28.60	1.125	ST-CLH-04-*-112						
5	28.60	1.125	ST-CLH-05-*-113	2.750 in. (70 mm)	1.219 in. (31mm)	2.375 in. (60 mm)	0.031 in. (0.8 mm)	2.050 in. (52 mm)	0.11 lbs
	32.00	1.250	ST-CLH-05-*-125						
	33.4	1.315	ST-CLH-05-*-132						
	38.1	1.500	ST-CLH-05-*-150						
	42.2	1.660	ST-CLH-05-*-166						
6	44.5	1.750	ST-CLH-06-*-175	3.375 in. (86 mm)	1.219 in. (31mm)	2.625 in. (67 mm)	0.031 in. (0.8 mm)	2.600 in. (66 mm)	0.12 lbs
	48.3	1.900	ST-CLH-06-*-190						
	50.8	2.000	ST-CLH-06-*-200						
7	57.2	2.250	ST-CLH-07-*-225	5.000 in. (127 mm)	1.219 in. (31mm)	4.375 in. (111 mm)	0.031 in. (0.8 mm)	4.250 in. (108 mm)	0.41 lbs
	60.3	2.375	ST-CLH-07-*-238						
	73	2.875	ST-CLH-07-*-288						
	76.2	3.000	ST-CLH-07-*-300						
	88.9	3.500	ST-CLH-07-*-350						
7A	102	4.000	ST-CLH-7A-*-400	5.750 in. (146 mm)	1.219 in. (31mm)	4.828 in. (123 mm)	0.031 in. (0.8 mm)	4.948 in. (126 mm)	0.39 lbs
	114.3	4.500	ST-CLH-7A-*-450						

Securing Plate Selection and Dimensions

Weld Plate [STW]

The typical mounting configuration is one where the clamp is welded to the support structure. Weld plates can also be used in the RAL-1 mounting rail as an alternative to using the RCN-1 rail nuts.



Group	Order Number	L1	L2	W	Weight Ea.
0	ST-STW-00-*	1.188 in. (30 mm)	0.420 in. (11 mm)		0.06 lbs.
1	ST-STW-01-*	1.510 in. (38 mm)	0.790 in. (20 mm)		0.07 lbs.
2	ST-STW-02-*	1.740 in. (44 mm)	1.020 in. (26 mm)		0.08 lbs.
3	ST-STW-03-*	2.020 in. (51 mm)	1.300 in. (33 mm)		0.10 lbs.
4	ST-STW-04-*	2.300 in. (58 mm)	1.580 in. (40 mm)	1.223 in. (31 mm)	0.11 lbs.
5	ST-STW-05-*	2.770 in. (70 mm)	2.050 in. (52 mm)		0.13 lbs.
6	ST-STW-06-*	3.320 in. (84 mm)	2.600 in. (66 mm)		0.15 lbs.
7	ST-STW-07-*	4.970 in. (126 mm)	4.250 in. (108 mm)		0.21 lbs.
7A	ST-STW-7A-*	5.776 in. (147 mm)	4.948 in. (126 mm)		0.27 lbs.

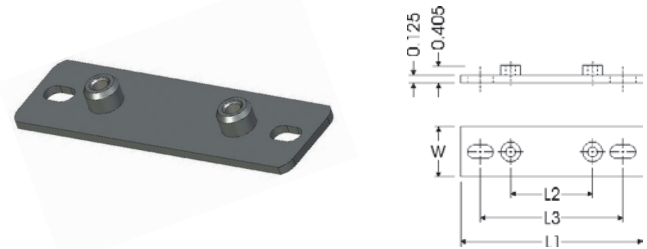
***Materials:**

- Z** Zinc Plated Steel (Standard Material)
- T** AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
- X** AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
- C** Unplated Carbon Steel (Special Order)

Threads: **omit** As ordered above, the weld plates have standard 1/4 - 20 UNC thread
-MET By adding the "-MET" designation after the material designation above, the threads are M6 metric thread

Base Plate [BAP]

The versatile base plate can be either welded or bolted to the structure. This is typically used where welding is not an option such as on drywall or wood support structures.



Group	Order Number	L1	L2	L3	W	Weight Ea.
0	N/A	-	-	-	-	-
1	ST-BAP-01-*	3.00 in. (76 mm)	0.790 in. (20 mm)	1.75 in. (44 mm)		0.13 lbs.
2	ST-BAP-02-*	3.25 in. (83 mm)	1.020 in. (26 mm)	2.00 in. (51 mm)		0.14 lbs.
3	ST-BAP-03-*	3.50 in. (89 mm)	1.300 in. (33 mm)	2.25 in. (57 mm)		0.16 lbs.
4	ST-BAP-04-*	3.813 in. (97 mm)	1.580 in. (40 mm)	2.563 in. (65 mm)	1.223 in. (31 mm)	0.16 lbs.
5	ST-BAP-05-*	4.25 in. (108 mm)	2.050 in. (52 mm)	3.00 in. (76 mm)		0.19 lbs.
6	ST-BAP-06-*	4.875 in. (124 mm)	2.600 in. (66 mm)	3.625 in. (92 mm)		0.20 lbs.
7	ST-BAP-07-*	6.50 in. (165 mm)	4.250 in. (108 mm)	5.25 in. (133 mm)		0.27 lbs.
7A	ST-BAP-7A-*	7.188 in. (183 mm)	4.948 in. (126 mm)	5.938 in. (171 mm)		0.35 lbs.

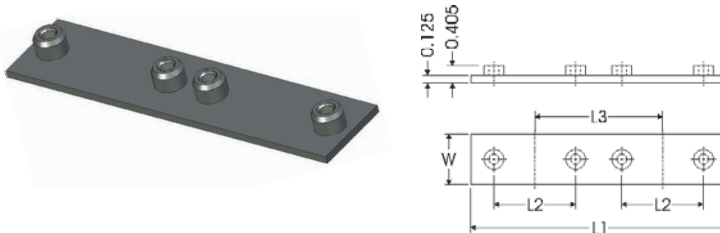
***Materials:**

- Z** Zinc Plated Steel (Standard Material)
- T** AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
- X** AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
- C** Unplated Carbon Steel (Special Order)

Threads: **omit** As ordered above, the weld plates have standard 1/4 - 20 UNC thread
-MET By adding the "-MET" designation after the material designation above, the threads are M6 metric thread

Double Weld Plate [DOW]

Double weld plates allow for runs of two lines side by side, while keeping center distances aligned and reducing installation time required.



Group	Order Number	L1	L2	L3	W	Weight Ea.
0	N/A	-	-	-	-	-
1	ST-DOW-01-*	3.00 in. (76 mm)	0.790 in. (20 mm)	1.51 in. (38 mm)		0.16 lbs.
2	ST-DOW-02-*	3.50 in. (89 mm)	1.020 in. (26 mm)	1.74 in. (44 mm)		0.17 lbs.
3	ST-DOW-03-*	4.00 in. (102 mm)	1.300 in. (33 mm)	2.02 in. (51 mm)		0.19 lbs.
4	ST-DOW-04-*	4.69 in. (119 mm)	1.580 in. (40 mm)	2.30 in. (58 mm)	1.223 in. (31 mm)	0.24 lbs.
5	ST-DOW-05-*	5.63 in. (143 mm)	2.050 in. (52 mm)	2.77 in. (70 mm)		0.26 lbs.
6	ST-DOW-06-*	6.88 in. (175 mm)	2.600 in. (66 mm)	3.32 in. (84 mm)		0.30 lbs.
7	ST-DOW-07-*	10.22 in. (260 mm)	4.250 in. (108 mm)	5.24 in. (133 mm)		0.45 lbs.
7A	ST-DOW-7A-*	11.69 in. (297 mm)	4.948 in. (126 mm)	6.02 in. (153 mm)		0.56 lbs.

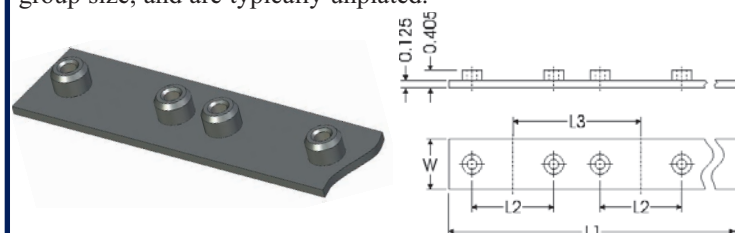
***Materials:**

- Z** Zinc Plated Steel (Standard Material)
- T** AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
- X** AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
- C** Unplated Carbon Steel (Special Order)

Threads: **omit** As ordered above, the weld plates have standard 1/4 - 20 UNC thread
-MET By adding the "-MET" designation after the material designation above, the threads are M6 metric thread

Group Weld Plate [GRW]

Group weld plates allow for runs of multiple lines side by side, while keeping regimented center distances and reducing installation time required. GRWs can run from 3 to 27 positions, depending on the group size, and are typically unplated.



Group	Order Number	L1	L2	L3	W
0	N/A	-	-	-	-
1	ST-GRW-01-*-xxx	C/F	0.790 in. (20 mm)	1.51 in. (38 mm)	
2	ST-GRW-02-*-xxx	C/F	1.020 in. (26 mm)	1.74 in. (44 mm)	
3	ST-GRW-03-*-xxx	C/F	1.300 in. (33 mm)	2.02 in. (51 mm)	
4	ST-GRW-04-*-xxx	C/F	1.580 in. (40 mm)	2.30 in. (58 mm)	1.223 in. (31 mm)
5	ST-GRW-05-*-xxx	C/F	2.050 in. (52 mm)	2.77 in. (70 mm)	
6	ST-GRW-06-*-xxx	C/F	2.600 in. (66 mm)	3.32 in. (84 mm)	
7	ST-GRW-07-*-xxx	C/F	4.250 in. (108 mm)	5.24 in. (133 mm)	
7A	ST-GRW-7A-*-xxx	C/F	4.948 in. (126 mm)	6.02 in. (153 mm)	

***Materials:**

- Z** Zinc Plated Steel (Special Order)
- T** AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
- X** AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
- C** Unplated Carbon Steel (Standard Material)

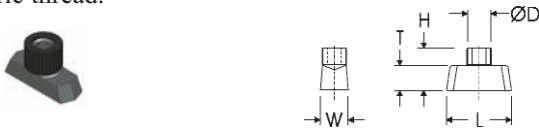
xxx: **Number of positions expressed as a 3-digit number**
 Example #1: ST-GRW-03-C-005 = Group 3, 5 Positions, Carbon Steel
 Example #2: ST-GRW-04-Z-010 = Group 4, 10 Positions, Zinc-Plated Steel

Threads: **omit** Weld plates have standard 1/4 - 20 UNC thread
-MET By adding the "-MET" designation after the material designation above, the threads are M6 metric thread

Rail and Strut Mounting Component Selection and Dimensions

Rail Nut [RCN-0 / MRN-0]

The RCN-0 is for use when mounting to Behringer's RAL-0, and competitor's DIN standard rails. The MRN is the same rail nut, but with metric thread.



Group	Order Number	L	W	T	H	Thread
0-7A	ST-RCN-99-*RN0	0.950 in. (24 mm)	0.405 in. (10.2 mm)	0.210 in. (5.3 mm)	0.570 in. (14.5 mm)	1/4 - 20 UNC
0-7A	ST-MRN-99-*RN0	0.950 in. (24 mm)	0.405 in. (10.2 mm)	0.210 in. (5.3 mm)	0.570 in. (14.5 mm)	M6

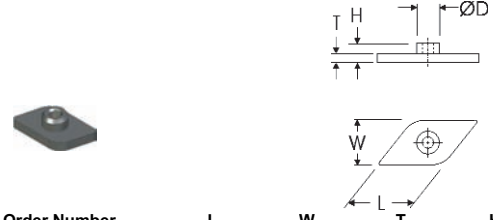
***Materials:**

- C Unplated Carbon Steel (Standard Material)
- T AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
- X AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
- Z Zinc Plated Steel (Special Material)

Weight Ea.: Approx. 0.02 lbs each

Rail Nut [RCN-1 / MRN-1]

The RCN-1 is used only when mounting to Behringer's proprietary RAL-1.



Group	Order Number	L	W	T	H	Thread
0-7A	ST-RCN-99-*RN1	1.075 in. (27.3 mm)	0.783 in. (19.9 mm)	0.175 in. (4.4 mm)	0.405 in. (10 mm)	1/4 - 20 UNC
0-7A	ST-MRN-99-*RN1	1.075 in. (27.3 mm)	0.783 in. (19.9 mm)	0.175 in. (4.4 mm)	0.405 in. (10 mm)	M6

***Materials:**

- Z Zinc Plated Steel (Standard Material)
- T AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
- X AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
- C Unplated Carbon Steel (Special Order)

Weight Ea.: Approx. 0.04 lbs

Mounting Rail [RAL-0]

Behringer's RAL-0 can be used to mount clamps with RCN-0 rail nuts only. This rail is a DIN standard rail. (DIN 3015-1)



Group	Order Number	W1	W2	Length	T	H
0-7A	ST-RA0-99-*xxx	1.125 in. (28 mm)	0.438 in. (11 mm)	See Below	14 gauge	0.438 in. (11 mm)

***Materials:**

- C Unplated Carbon Steel (Standard Material)
- T AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
- X AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
- Z Zinc Plated Steel (Special Order)

xxx Length:

6FT	72 in. (1829 mm) Length (Standard Length)	3.30 lbs Ea
3FT	36 in. (914 mm) Length (Special Length)	1.65 lbs Ea

Custom sizes available on request

Mounting Rail [RAL-1]

Behringer's Proprietary RAL-1 can be used to mount both clamps with RCN-1 rail nuts or STW weld plates. This allows more flexibility of inventories and simplifies installation and field modifications.



Group	Order Number	W1	W2	Length	T	H
0-7A	ST-RA1-99-*xxx	1.438 in. (28 mm)	0.625 in. (11 mm)	See Below	14 gauge	0.438 in. (11 mm)

***Materials:**

- Z Zinc Plated Steel (Standard Material)
- T AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
- X AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
- C Unplated Carbon Steel (Special Order)

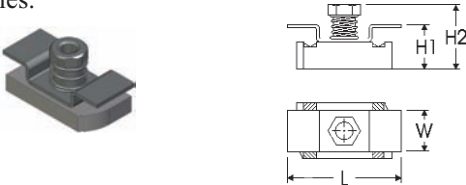
xxx Length:

6FT	72 in. (1829 mm) Length (Standard Length)	4.06 lbs Ea
3FT	36 in. (914 mm) Length (Special Length)	2.03 lbs Ea

Custom sizes available on request

Strut Clip Nut [UCN]

The UCN nut is used to adapt Behringer's pipe clamps to standard strut channel. This allows for even greater flexibility and mounting possibilities.



Group	Order Number	L	W	H1	H2	Thread
0-7A	ST-UCN-99-*N	1.660 in. (42 mm)	0.635 in (16 mm)	0.525 in. (13 mm)	0.813 in. (20.5 mm)	1/4 - 20 UNC

***Materials:**

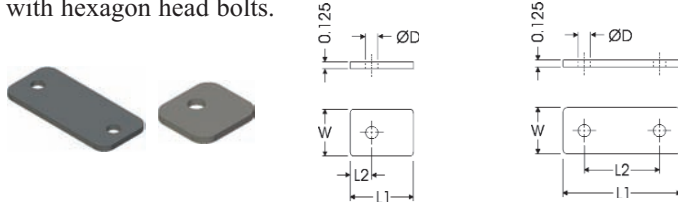
- Z Zinc Plated Steel (Standard Material)
- T AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
- X AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
- C Unplated Carbon Steel (Special Order)

Weight Ea.: Approx. 0.10 lbs.

Cover and Stacking Component Selection and Dimensions

Cover Plate [COP]

The Cover plate is the standard top fixture for securing the clamp with hexagon head bolts.

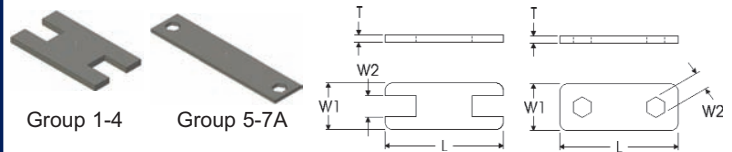


Group	Order Number	L1	L2	W	ØD	Weight Ea.
0	ST-COP-00-*	1.044 in. (27 mm)	0.370 in. (9 mm)			0.04 lbs.
1	ST-COP-01-*	1.362 in. (36 mm)	0.790 in. (20 mm)			0.05 lbs.
2	ST-COP-02-*	1.592 in. (40 mm)	1.020 in. (26 mm)			0.06 lbs.
3	ST-COP-03-*	1.872 in. (48 mm)	1.300 in. (33 mm)			0.07 lbs.
4	ST-COP-04-*	2.152 in. (55 mm)	1.580 in. (40 mm)			0.08 lbs.
5	ST-COP-05-*	2.790 in. (71 mm)	2.050 in. (52 mm)			0.10 lbs.
6	ST-COP-06-*	3.340 in. (85 mm)	2.600 in. (66 mm)			0.14 lbs.
7	ST-COP-07-*	5.020 in. (128 mm)	4.250 in. (108 mm)			0.18 lbs.
7A	ST-COP-7A-*	5.782 in. (147 mm)	4.948 in. (126 mm)			0.27 lbs.

*Materials:	Z	Zinc Plated Steel (Standard Material)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	C	Unplated Carbon Steel (Special Order)

Safety Plate [SAF]

The safety plate is used in conjunction with the STB stacking bolts below. This ensures that the stacking bolts will remain locked in place when tightening the clamp module stacked above.



Group	Order Number	L	W1	W2	T	Weight Ea.
0	N/A	-	-	-	-	-
1	ST-SAF-01-*	1.330 in. (34 mm)	1.125 in. (29 mm)	0.440 in. (11.2 mm)		0.01 lbs.
2	ST-SAF-02-*	1.560 in. (40 mm)	1.125 in. (29 mm)	0.440 in. (11.2 mm)		0.02 lbs.
3	ST-SAF-03-*	1.872 in. (48 mm)	1.125 in. (29 mm)	0.440 in. (11.2 mm)		0.02 lbs.
4	ST-SAF-04-*	2.120 in. (54 mm)	1.125 in. (29 mm)	0.440 in. (11.2 mm)	0.046 in. (1 mm)	0.03 lbs.
5	ST-SAF-05-*	2.760 in. (70 mm)	1.125 in. (29 mm)	0.460 in. (11.7 mm)		0.04 lbs.
6	ST-SAF-06-*	3.340 in. (85 mm)	1.125 in. (29 mm)	0.460 in. (11.7 mm)		0.04 lbs.
7	ST-SAF-07-*	5.020 in. (128 mm)	1.125 in. (29 mm)	0.460 in. (11.7 mm)		0.07 lbs.
7A	ST-SAF-7A-*	5.782 in. (147 mm)	1.125 in. (29 mm)	0.460 in. (11.7 mm)		C/F

*Materials:	Z	Zinc Plated Steel (Standard Material)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	C	Unplated Carbon Steel (Special Order)

Hexagon Head Bolt [HEX]

The Hexagon head bolt is used when using clamps with cover plates or cover washers.



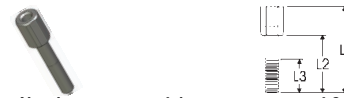
Group	Order Number	L	UNC Thread	Metric Thread	Weight Ea.
0	ST-HEX-01-*	1.25 in. (32 mm)	1/4 - 20 UNC	M6	0.02 lbs.
1	ST-HEX-01-*	1.25 in. (32 mm)	1/4 - 20 UNC	M6	0.02 lbs.
2	ST-HEX-02-*	1.50 in. (38 mm)	1/4 - 20 UNC	M6	0.02 lbs.
3	ST-HEX-02-*	1.50 in. (38 mm)	1/4 - 20 UNC	M6	0.02 lbs.
4	ST-HEX-04-*	1.75 in. (44 mm)	1/4 - 20 UNC	M6	0.03 lbs.
5	ST-HEX-05-*	2.50 in. (64 mm)	1/4 - 20 UNC	M6	0.04 lbs.
6	ST-HEX-06-*	2.75 in. (70 mm)	1/4 - 20 UNC	M6	0.04 lbs.
7	ST-HEX-07-*	4.50 in. (114 mm)	1/4 - 20 UNC	M6	0.06 lbs.
7A	ST-HEX-7A-*	5.00 in. (127 mm)	1/4 - 20 UNC	M6	0.06 lbs.

*Materials:	Z	Zinc Plated Steel (Standard Material)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	C	Unplated Carbon Steel (Special Order)

Threads:	omit	As ordered above, the weld plates have standard 1/4 - 20 UNC thread
	-MET	By adding the "-MET" designation after the material designation above, the threads are M6 metric thread

Stacking Bolt [STB]

The stacking bolt is used when another clamp module will be stacked on top of the bottom or existing module. The head of the stacking bolt has a female thread for the next bolt to engage with.



Group	Order Number	L1	L2	L3	Weight Ea.
0	ST-STB-01-*	1.438 in. (36.5 mm)	0.813 in. (21 mm)	0.75 in. (19 mm)	0.03 lbs.
1	ST-STB-01-*	1.438 in. (36.5 mm)	0.813 in. (21 mm)	0.75 in. (19 mm)	0.03 lbs.
2	ST-STB-02-*	1.688 in. (43 mm)	1.063 in. (27 mm)	0.75 in. (19 mm)	0.04 lbs.
3	ST-STB-02-*	1.688 in. (43 mm)	1.063 in. (27 mm)	0.75 in. (19 mm)	0.04 lbs.
4	ST-STB-04-*	1.938 in. (49 mm)	1.313 in. (33 mm)	0.75 in. (19 mm)	0.04 lbs.
5	ST-STB-05-*	2.688 in. (68 mm)	2.063 in. (52 mm)	0.75 in. (19 mm)	0.05 lbs.
6	ST-STB-06-*	2.938 in. (75 mm)	2.313 in. (59 mm)	0.75 in. (19 mm)	0.05 lbs.
7	ST-STB-07-*	4.688 in. (119 mm)	4.063 in. (103 mm)	0.75 in. (19 mm)	0.08 lbs.
7A	C/F	-	-	-	-

*Materials:	Z	Zinc Plated Steel (Standard Material)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	C	Unplated Carbon Steel (Special Order)

Threads:	omit	As ordered above, the weld plates have standard 1/4 - 20 UNC thread
	-MET	By adding the "-MET" designation after the material designation above, the threads are M6 metric thread

Cover Washer [COW]

Cover washers can be used as an alternative to cover plates in some applications where there is little vibration, and low operating pressures.



Group	Order Number	ØD1	ØD2	T	Weight Ea.
0-7A	ST-COW-99-*	0.630 in. (16 mm)	0.265 in. (6.7 mm)	0.117 in. (3 mm)	0.01 lbs.

*Materials:	Z	Zinc Plated Steel (Standard Material)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	C	Unplated Carbon Steel (Special Material)

Chart 1 Chart 2 Chart 3 Chart 4 Chart 5
S T 5150 - PP - MET

① Clamp Configuration	
S	Complete Clamp for Weld Mounting [STW]
BS	Complete Clamp for Bolt Mounting [BAP]
DS	Complete Double Clamp for Weld Mounting [DOW]
R0S	Complete Clamp for mounting to RAL-0 [RCN-0]
R1S	Complete Clamp for mounting to RAL-1 [RCN-1]
US	Complete Clamp for mounting to Strut Channel [UCN]
G*S	Complete Clamp for Group Weld Plate Mounting [GRW] * is the number of positions
SSK	Stacking Kit [SAF + STB]

② Hardware Materials	
Omit	Electro-Zinc Dichromate Plating RCN-0 rail nuts and group weld plates (GRW) are still supplied as untreated carbon steel. Zinc plating available for these parts on request.
T	AISI 304 Stainless Steel (A2 - 1.4301/1.4305)
X	AISI 316/316Ti Stainless Steel (A4 - 1.4401/1.4571)
C	Untreated Carbon Steel

④ Clamp Pair Material	
PP	Polypropylene
SP	Santoprene
AL	Aluminum Groups 1-6 only

⑤ Threads	
Omit	UNC Thread (Standard)
MET	Metric Thread (Special)

③ Clamp Group and Size					
Behringer Group	Pipe Size	Tube Size	Metric OD (mm)	Imperial OD (Inch)	Clamp Halves (Set of 2)
0		1/4	6.40	0.250	0025
		3/8	9.50	0.375	0038
	1/8		10.00	0.405	00405
1		1/4	6.40	0.250	1025
		3/8	9.50	0.380	1038
	1/8		10.00	0.405	10405
			12.00	0.472	10472
2		1/2	12.70	0.500	2050
	1/4		14.00	0.540	20540
			15.00	0.591	2059
		5/8	16.00	0.620	2062
	3/8		17.10	0.675	20675
3			18.00	0.709	3071
		3/4	19.00	0.750	3075
	1/2		21.30	0.840	30840
		7/8	22.20	0.870	3087
4		1	25.40	1.000	3100
	3/4		26.70	1.050	41050
		1 1/8	28.60	1.125	41125
5		1 1/4	32.00	1.250	5125
	1		33.4	1.315	51315
		1 1/2	38.1	1.500	5150
	1 1/4		42.2	1.660	51660
6		1 3/4	44.5	1.750	6175
	1 1/2		48.3	1.900	61900
		2	50.8	2.000	6200
7		2 1/4	57.2	2.250	7225
	2		60.3	2.375	72375
	2 1/2		73	2.875	72875
		3	76.2	3.000	7300
	3	3 1/2	88.9	3.500	7350
7A		4	102	4.000	7A400
	4	4 1/2	114.3	4.500	7A450

Ordering Examples

S



Single Clamp for Weld Mounting

Consists of:
2 HEX bolts
1 COP Cover Plate
1 CLH Clamp Set (2 halves)
1 STW Weld Plate

DS



Double Clamp for Weld Mounting

Consists of:
4 HEX bolts
2 COP Cover Plate
2 CLH Clamp Sets (4 halves)
1 DOW Weld Plate

BS



Clamp for Bolt Mounting

Consists of:
2 HEX bolts
1 COP Cover Plate
1 CLH Clamp Set (2 halves)
1 BAP Weld Plate

SSK



Stacking Kit

Consists of:
2 STB Stacking Bolts
1 SAF Safety Plates
1 CLH Clamp Sets (2 halves)

R0S



Clamp for Rail-0 Mounting

Consists of:
2 HEX bolts
1 COP Cover Plate
1 CLH Clamp Set (2 halves)
2 RCN-0 Rail Nuts
Standard material for the RCN-0 rail nuts is un-plated steel.

R1S



Clamp for Rail-1 Mounting

Consists of:
2 HEX bolts
1 COP Cover Plate
1 CLH Clamp Set (2 halves)
2 RCN-1 Rail Nuts

Ordering Examples

US



Clamp for Strut Mounting

Consists of:
 2 HEX bolts
 1 COP Cover Plate
 1 CLH Clamp Set (2 halves)
 2 UCN Strut Clips

G*S



Clamp for Group Weld Mounting

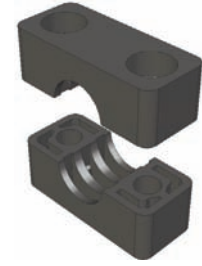
Consists of:
 2 HEX bolts x Number of Positions
 1 COP Cover Plate x Number of Positions
 1 CLH Clamp Set (2 halves) x Number of Positions
 1 GRW Group Weld Plate (continuous length)
 Standard Material for the GRW is un-plated steel.

*is the number of positions

Example: Group 2, 5 positions of 1/2" Tube, PP Clamps, 304SS = G5ST2050-PP

Clamp Pair Selection

Behringer's clamp halves are available in different materials and incorporate a modular insert by group size. Heavy Series pipe clamps are available in sizes from 1/4 in. (6.35mm) through 8.625 in. (219mm) OD Sizes.



Clamp Pair Selection and Part Numbers

Behringer Group	Pipe Size	Tube Size	Metric OD (mm)	Imperial OD (Inch)	Clamp Halves (See material code for *)
H3		1/4	6.4	0.250	HS-CLH-03-*025
		3/8	9.5	0.375	HS-CLH-03-*038
	1/8		10.0	0.405	HS-CLH-03-*041
		1/2	12.7	0.500	HS-CLH-03-*050
	1/4		13.7	0.540	HS-CLH-03-*054
		5/8	16.0	0.620	HS-CLH-03-*062
H4		3/4	19.0	0.750	HS-CLH-04-*075
			20.0	0.790	HS-CLH-04-*079
	1/2		21.3	0.840	HS-CLH-04-*084
		7/8	22.2	0.870	HS-CLH-04-*087
		1	25.4	1.000	HS-CLH-04-*100
	3/4		26.7	1.050	HS-CLH-04-*105
H5			30.0	1.181	HS-CLH-04-*118
		1 1/4	32.0	1.250	HS-CLH-05-*125
	1		33.4	1.315	HS-CLH-05-*132
		1 1/2	38.1	1.500	HS-CLH-05-*150
H6			42.2	1.660	HS-CLH-05-*166
	1		33.4	1.315	HS-CLH-06-*132
	1 1/4		42.2	1.660	HS-CLH-06-*166
		1 3/4	44.5	1.750	HS-CLH-06-*175
	1 1/2		48.3	1.900	HS-CLH-06-*190
		2	50.8	2.000	HS-CLH-06-*200
		2 1/8	54.0	2.125	HS-CLH-06-*213
		2 1/4	57.2	2.250	HS-CLH-06-*225
	2		60.3	2.375	HS-CLH-06-*238
		2 1/2	63.5	2.500	HS-CLH-06-*250
H7		2 3/4	69.9	2.750	HS-CLH-06-*275
		2 3/4	69.9	2.750	HS-CLH-07-*275
	2 1/2		73.0	2.875	HS-CLH-07-*288
		3	76.2	3.000	HS-CLH-07-*300
H8	3	3 1/2	88.9	3.500	HS-CLH-07-*350
		4	102	4.000	HS-CLH-08-*400
	4	4 1/2	114	4.500	HS-CLH-08-*450
		5	127	5.000	HS-CLH-08-*500
H9		5	127	5.000	HS-CLH-09-*500
		5 1/4	133	5.250	HS-CLH-09-*525
	5		141	5.563	HS-CLH-09-*556
		6	152	6.000	HS-CLH-09-*600
H10			168	6.625	HS-CLH-09-*663
	6		168	6.625	HS-CLH-10-*663
		8	203	8.000	HS-CLH-10-*800
	8		219	8.625	HS-CLH-10-*863

Clamp Pair Material Codes (*)

P	[PP] Polypropylene Black Color
S	[SP] Santoprene Beige Color
A	[AL] Aluminum Aluminum Color

Custom Sizes

Custom sizes can be made by specially boring the clamp pair to any desired size. To order a special size, first find the group that this will fall under. All groups are available starting with 1/4 in. OD and can be used up to the maximum OD size in the chart below. This is expressed in the part number as a two-digit number (G#) Once you have determined your group size, simply add the desired OD of the line to be secured in the 3 digit end number of the clamp pair (XXX) by rounding the number to two decimals and dropping the decimal point. The part number will look like this:

HS-CLH-G#-*XXX

Example: For a line with OD of 1.08 in., this would fall within the group 5. The Part number will be as follows:

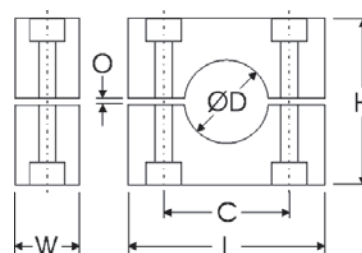
HS-CLH-05-*108

Special Bore Range by Group

Group (G#)	Range
H3	0.25 in. through 0.675 in.
H4	0.25 in. through 1.050 in.
H5	0.25 in. through 1.660 in.
H6	0.25 in. through 2.750 in.
H7	0.25 in. through 3.500 in.
H8	0.25 in. through 5.000 in.
H9	0.25 in. through 6.625 in.
H10	0.25 in. through 8.625 in.

Clamp Pair Dimensions

The robust Heavy Series design is larger and thicker than the Standard Series, and is designed for the toughest applications. As a general rule of thumb, the outside diameter of the line to be secured should not vary over or under the ØD dimension in the chart by more than ½ of the tension clearance dimension (dimension “O”). Heavy Series pipe clamps are available in sizes from ¼ in. (6.35mm) through 8.625 in. (219mm) outside diameter sizes. If a required size is not available, custom sizes can be made to order.



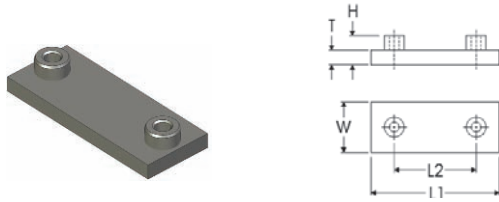
Clamp Pair Dimensional Information

Behringer Group	Metric ØD (mm)	Imperial ØD (Inch)	Clamp Halves (See page 1 for complete order numbers)	L	C	H	O	W	Weight Ea.
H3	6.4	0.250	HS-CLH-03-*-025	2.250 in. (57 mm)	1.300 in. (33 mm)	1.375 in. (35 mm)	0.063 in. (1.6 mm)	1.188 in. (30.2 mm)	0.07 lbs
	9.5	0.375	HS-CLH-03-*-038						
	10.0	0.405	HS-CLH-03-*-041						
	12.7	0.500	HS-CLH-03-*-050						
	13.7	0.540	HS-CLH-03-*-054						
	16.0	0.620	HS-CLH-03-*-062						
	17.1	0.675	HS-CLH-03-*-068						
H4	19.0	0.750	HS-CLH-04-*-075	2.750 in. (70 mm)	1.770 in. (45 mm)	1.875 in. (48 mm)	0.063 in. (1.6 mm)	1.188 in. (30.2 mm)	0.09 lbs
	20.0	0.790	HS-CLH-04-*-079						
	21.3	0.840	HS-CLH-04-*-084						
	22.2	0.870	HS-CLH-04-*-087						
	25.4	1.000	HS-CLH-04-*-100						
	26.7	1.050	HS-CLH-04-*-105						
	30.0	1.181	HS-CLH-04-*-118						
H5	32.0	1.250	HS-CLH-05-*-125	3.344 in. (87 mm)	2.360 in. (60 mm)	2.375 in. (60 mm)	0.063 in. (1.6 mm)	1.188 in. (30.2 mm)	0.15 lbs
	33.4	1.315	HS-CLH-05-*-132						
	38.1	1.500	HS-CLH-05-*-150						
	42.2	1.660	HS-CLH-05-*-166						
H6	33.4	1.315	HS-CLH-06-*-132	4.500 in. (115 mm)	3.530 in. (90 mm)	3.500 in. (89 mm)	0.125 in. (3.2 mm)	1.688 in. (43 mm)	0.35 lbs
	42.2	1.660	HS-CLH-06-*-166						
	44.5	1.750	HS-CLH-06-*-175						
	48.3	1.900	HS-CLH-06-*-190						
	50.8	2.000	HS-CLH-06-*-200						
	54.0	2.125	HS-CLH-06-*-213						
	57.2	2.250	HS-CLH-06-*-225						
	60.3	2.375	HS-CLH-06-*-238						
	63.5	2.500	HS-CLH-06-*-250						
H7	69.9	2.750	HS-CLH-07-*-275	6.000 in. (152 mm)	4.810 in. (122 mm)	4.750 in. (121 mm)	0.125 in. (3.2 mm)	2.188 in. (55.6 mm)	0.78 lbs
	73.0	2.875	HS-CLH-07-*-288						
	76.2	3.000	HS-CLH-07-*-300						
	88.9	3.500	HS-CLH-07-*-350						
H8	88.9	3.500	HS-CLH-08-*-350	8.063 in. (205 mm)	6.620 in. (168 mm)	6.625 in. (168 mm)	0.188 in. (4.8 mm)	2.938 in. (74.6 mm)	2.31 lbs
	102.0	4.000	HS-CLH-08-*-400						
	114.0	4.500	HS-CLH-08-*-450						
	127.0	5.000	HS-CLH-08-*-500						
H9	127.0	5.000	HS-CLH-09-*-500	9.750 in. (248 mm)	8.060 in. (205 mm)	7.875 in. (200 mm)	0.188 in. (4.8 mm)	3.438 in. (87.3 mm)	2.59 lbs
	133.0	5.250	HS-CLH-09-*-525						
	141.0	5.563	HS-CLH-09-*-556						
	152.0	6.000	HS-CLH-09-*-600						
	168.0	6.625	HS-CLH-09-*-663						
H10	168.0	6.625	HS-CLH-10-*-663	12.500 in. (318 mm)	10.430 in. (265 mm)	10.625 in. (270 mm)	0.188 in. (4.8 mm)	4.438 in. (113 mm)	7.73 lbs
	203.0	8.625	HS-CLH-10-*-800						
	219.0	8.000	HS-CLH-10-*-863						

Securing Plate Selection and Dimensions

Single Weld Plate [SWP]

The typical mounting configuration is where the clamp is welded to the support structure.



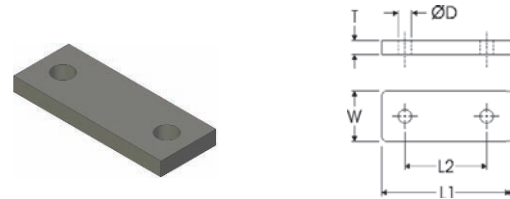
Group	Order Number	L1	L2	W	T	H	Thread	Weight Ea.
H3	HS-SWP-03-*	2.875 in. (73 mm)	1.30 in. (33 mm)	1.25 in. (32 mm)	0.313 in. (8 mm)	0.313 in. (8 mm)	3/8 - 16 UNC (M10)	0.34 lbs
H4	HS-SWP-04-*	3.375 in. (86 mm)	1.77 in. (45 mm)	1.25 in. (32 mm)	0.313 in. (8 mm)	0.313 in. (8 mm)	3/8 - 16 UNC (M10)	0.39 lbs
H5	HS-SWP-05-*	4.000 in. (102 mm)	2.36 in. (60 mm)	1.25 in. (32 mm)	0.313 in. (8 mm)	0.313 in. (8 mm)	3/8 - 16 UNC (M10)	0.45 lbs
H6	HS-SWP-06-*	5.875 in. (149 mm)	3.53 in. (90 mm)	1.75 in. (45 mm)	0.375 in. (10 mm)	0.380 in. (10 mm)	7/16 - 14 UNC (M12)	1.10 lbs
H7	HS-SWP-07-*	7.375 in. (187 mm)	4.81 in. (122 mm)	2.25 in. (57 mm)	0.375 in. (10 mm)	0.472 in. (12 mm)	5/8 - 11 UNC (M16)	1.71 lbs
H8	HS-SWP-08-*	10.000 in. (254 mm)	6.62 in. (168 mm)	3.00 in. (76 mm)	0.500 in. (13 mm)	0.680 in. (17 mm)	3/4 - 10 UNC (M20)	4.15 lbs
H9	HS-SWP-09-*	11.750 in. (298 mm)	8.06 in. (205 mm)	3.50 in. (89 mm)	0.500 in. (13 mm)	0.755 in. (19 mm)	7/8 - 9 UNC (M24)	5.83 lbs
H10	HS-SWP-10-*	14.500 in. (368 mm)	10.43 in. (265 mm)	4.50 in. (114 mm)	0.750 in. (19 mm)	0.755 in. (19 mm)	1-1/8 - 7 UNC (M30)	13.65 lbs

***Materials:**
C Unplated Carbon Steel (Standard Material)
T AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
X AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
Z Zinc Plated Steel (Special Order)

Threads:
omit As ordered above, the weld plates have standard UNC thread
-MET By adding the "-MET" designation after the material designation above, the threads will be metric

Single Cover Plate [SCP]

The cover plate is the standard top fixture for securing the clamp with hexagon head bolts.



Group	Order Number	L1	L2	W	T	ØD	Weight Ea.
H3	HS-SCP-03-*	2.250 in. (57 mm)	1.30 in. (33 mm)	1.25 in. (32 mm)	0.313 in. (8 mm)	0.438 in. (11 mm)	0.21 lbs
H4	HS-SCP-04-*	2.750 in. (70 mm)	1.77 in. (45 mm)	1.25 in. (32 mm)	0.313 in. (8 mm)	0.438 in. (11 mm)	0.26 lbs
H5	HS-SCP-05-*	3.344 in. (85 mm)	2.36 in. (60 mm)	1.25 in. (32 mm)	0.313 in. (8 mm)	0.438 in. (11 mm)	0.32 lbs
H6	HS-SCP-06-*	4.500 in. (114 mm)	3.53 in. (90 mm)	1.75 in. (45 mm)	0.375 in. (10 mm)	0.500 in. (13 mm)	0.77 lbs
H7	HS-SCP-07-*	6.000 in. (152 mm)	4.81 in. (122 mm)	2.25 in. (57 mm)	0.375 in. (10 mm)	0.688 in. (18 mm)	1.28 lbs
H8	HS-SCP-08-*	8.063 in. (205 mm)	6.62 in. (168 mm)	3.00 in. (76 mm)	0.500 in. (13 mm)	0.813 in. (21 mm)	3.19 lbs
H9	HS-SCP-09-*	9.750 in. (248 mm)	8.06 in. (205 mm)	3.50 in. (89 mm)	0.500 in. (13 mm)	0.938 in. (24 mm)	4.58 lbs
H10	HS-SCP-10-*	12.500 in. (318 mm)	10.43 in. (265 mm)	4.50 in. (114 mm)	0.750 in. (19 mm)	1.188 in. (30 mm)	11.31 lbs

***Materials:**
C Unplated Carbon Steel (Standard Material)
T AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
X AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
Z Zinc Plated Steel (Special Order)

Double Weld Plate [DWP]

Double weld plates are used to make a double heavy clamp, with both sets of clamp halves in line with the piping. This design can accommodate double the operating pressure as the single heavy pipe clamps.



Group	Order Number	L1	L2	W	T	H	Thread	Weight Ea.
H3	HS-DWP-03-*	2.875 in. (73 mm)	1.30 in. (33 mm)	2.50 in. (63 mm)	0.313 in. (8 mm)	0.313 in. (8 mm)	3/8 - 16 UNC (M10)	0.72
H4	HS-DWP-04-*	3.375 in. (86 mm)	1.77 in. (45 mm)	2.50 in. (63 mm)	0.313 in. (8 mm)	0.313 in. (8 mm)	3/8 - 16 UNC (M10)	0.78
H5	HS-DWP-05-*	4.000 in. (102 mm)	2.36 in. (60 mm)	2.50 in. (63 mm)	0.313 in. (8 mm)	0.313 in. (8 mm)	3/8 - 16 UNC (M10)	0.90
H6	HS-DWP-06-*	5.875 in. (149 mm)	3.53 in. (90 mm)	3.50 in. (89 mm)	0.375 in. (10 mm)	0.380 in. (10 mm)	7/16 - 14 UNC (M12)	2.20
H7	HS-DWP-07-*	7.375 in. (187 mm)	4.81 in. (122 mm)	4.50 in. (114 mm)	0.375 in. (10 mm)	0.472 in. (12 mm)	5/8 - 11 UNC (M16)	3.42
H8	HS-DWP-08-*	10.000 in. (254 mm)	6.62 in. (168 mm)	6.00 in. (152 mm)	0.500 in. (13 mm)	0.680 in. (17 mm)	3/4 - 10 UNC (M20)	8.30
H9	HS-DWP-09-*	11.750 in. (298 mm)	8.06 in. (205 mm)	7.00 in. (178 mm)	0.500 in. (13 mm)	0.755 in. (19 mm)	7/8 - 9 UNC (M24)	11.75
H10	HS-DWP-10-*	14.500 in. (368 mm)	10.43 in. (265 mm)	9.375 in. (238 mm)	0.750 in. (19 mm)	0.755 in. (19 mm)	1-1/8 - 7 UNC (M30)	28.00

***Material**
C Unplated Carbon Steel (Standard Material)
T AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
X AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
Z Zinc Plated Steel (Special Order)

Threads:
omit As ordered above, the weld plates have standard UNC thread
-MET By adding the "-MET" designation after the material designation above, the threads will be metric

Double Cover Plate [DCP]

Double cover plates are used to make a double heavy clamp, with both sets of clamp halves in line with the piping. This design can accommodate double the operating pressure of the single heavy pipe clamps.



Group	Order Number	L1	L2	W	T	ØD	Weight Ea.
H3	HS-DCP-03-*	2.250 in. (57 mm)	1.30 in. (33 mm)	2.50 in. (63 mm)	0.313 in. (8 mm)	0.438 in. (11 mm)	0.42 lbs
H4	HS-DCP-04-*	2.750 in. (70 mm)	1.77 in. (45 mm)	2.50 in. (63 mm)	0.313 in. (8 mm)	0.438 in. (11 mm)	0.52 lbs
H5	HS-DCP-05-*	3.344 in. (85 mm)	2.36 in. (60 mm)	2.50 in. (63 mm)	0.313 in. (8 mm)	0.438 in. (11 mm)	0.64 lbs
H6	HS-DCP-06-*	4.500 in. (114 mm)	3.53 in. (90 mm)	3.50 in. (89 mm)	0.375 in. (10 mm)	0.500 in. (13 mm)	1.54 lbs
H7	HS-DCP-07-*	6.000 in. (152 mm)	4.81 in. (122 mm)	4.50 in. (114 mm)	0.375 in. (10 mm)	0.688 in. (18 mm)	2.56 lbs
H8	HS-DCP-08-*	8.063 in. (205 mm)	6.62 in. (168 mm)	6.00 in. (152 mm)	0.500 in. (13 mm)	0.813 in. (21 mm)	6.38 lbs
H9	HS-DCP-09-*	9.750 in. (248 mm)	8.06 in. (205 mm)	7.00 in. (178 mm)	0.500 in. (13 mm)	0.938 in. (24 mm)	9.16 lbs
H10	HS-DCP-10-*	12.500 in. (318 mm)	10.43 in. (265 mm)	9.375 in. (238 mm)	0.750 in. (19 mm)	1.188 in. (30 mm)	22.62 lbs

***Materials:**
C Unplated Carbon Steel (Standard Material)
T AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
X AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
Z Zinc Plated Steel (Special Order)

Fastening Hardware Selection and Dimensions

Hexagon Head Bolt [HEX]

The Hexagon head bolt is used when using clamps with cover plates.



Group	Order Number	L	UNC Thread	Metric Thread	Weight Ea.
H3	HS-HEX-03-*	1.75 in. (44 mm)	3/8 - 16 UNC	M10	0.06 lbs.
H4	HS-HEX-04-*	2.25 in. (57 mm)	3/8 - 16 UNC	M10	0.08 lbs.
H5	HS-HEX-05-*	2.75 in. (70 mm)	3/8 - 16 UNC	M10	0.09 lbs.
H6	HS-HEX-06-*	4.00 in. (102 mm)	7/16 - 14 UNC	M12	0.18 lbs.
H7	HS-HEX-07-*	5.25 in. (133 mm)	5/8 - 11 UNC	M16	0.50 lbs.
H8	HS-HEX-08-*	7.50 in. (191 mm)	3/4 - 10 UNC	M20	0.97 lbs.
H9	HS-HEX-09-*	8.50 in. (216 mm)	7/8 - 9 UNC	M24	1.56 lbs.
H10	HS-HEX-10-*	11.50 in. (292 mm)	1-1/8 - 7 UNC	M30	3.53 lbs.

*Materials:	C	Unplated Carbon Steel (Standard Material)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	Z	Zinc Plated Steel (Special Order)

Stacking Bolt [STB]

The stacking bolt is used when another clamp module will be stacked on top of the bottom or existing module. The head of the stacking bolt has a female thread for the next bolt to engage with.



Group	Order Number	L1	L2	L3	UNC	Metric	Weight Ea.
H3	HS-STB-03-*	1.969 in. (50 mm)	0.906 in. (23 mm)	0.906 in. (23 mm)	3/8 - 16	M10	0.10 lbs.
H4	HS-STB-04-*	2.469 in. (63 mm)	1.406 in. (36 mm)	1.000 in. (25.4 mm)	3/8 - 16	M10	0.11 lbs.
H5	HS-STB-05-*	2.969 in. (75 mm)	1.906 in. (48 mm)	1.000 in. (25.4 mm)	3/8 - 16	M10	0.13 lbs.
H6	HS-STB-06-*	4.250 in. (108 mm)	2.875 in. (73 mm)	1.250 in. (32 mm)	7/16 - 14	M12	0.24 lbs.
H7	HS-STB-07-*	5.500 in. (140 mm)	3.875 in. (98 mm)	1.250 in. (32 mm)	5/8 - 11	M16	0.49 lbs.
H8	HS-STB-08-*	7.750 in. (197 mm)	5.750 in. (146 mm)	1.500 in. (38 mm)	3/4 - 10	M20	1.15 lbs.
H9	HS-STB-09-*	9.188 in. (233 mm)	7.000 in. (178 mm)	1.750 in. (44 mm)	7/8 - 9	M24	1.65 lbs.
H10	HS-STB-10-*	12.000 in. (305 mm)	9.500 in. (241 mm)	2.250 in. (57 mm)	1-1/8 - 7	M30	2.50 lbs.

*Materials:	C	Unplated Carbon Steel (Standard Material)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	Z	Zinc Plated Steel (Special Order)

Strut Clip Nut [UCN]

The UCN nut is used to adapt Behringer's pipe clamps to standard strut channel. This allows for even greater flexibility and mounting possibilities.



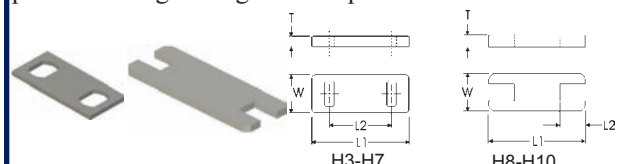
Group	Order Number	L	W	H1	H2	Thread
H3 - H5	HS-UCN-345-*	1.500 in. (38 mm)	0.866 in. (22 mm)	0.728 in. (18.5 mm)	1.083 in. (2.75 mm)	3/8 - 16 UNC
H6	HS-UCN-06-*	-	-	-	-	-

*Materials:	C	Unplated Carbon Steel (Special Order)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	Z	Zinc Plated Steel (Standard Material)

Weight Ea.: Approx. 0.2 lbs.

Safety Plate [SAF]

The Safety plate is used in conjunction with the STB stacking bolts above. This ensures that the stacking bolts will remain locked in place when tightening the clamp module stacked above.



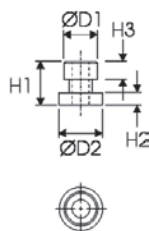
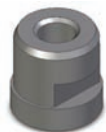
Group	Order Number	L1	L2	W	T	Weight Ea.
H3	HS-SAF-03-*	2.281 in. (58 mm)	1.300 in. (33 mm)	1.219 in. (31 mm)	0.125 in. (3.2 mm)	0.06 lbs.
H4	HS-SAF-04-*	2.750 in. (70 mm)	1.770 in. (45 mm)	1.219 in. (31 mm)	0.125 in. (3.2 mm)	0.08 lbs.
H5	HS-SAF-05-*	3.344 in. (85 mm)	2.360 in. (60 mm)	1.219 in. (31 mm)	0.125 in. (3.2 mm)	0.11 lbs.
H6	HS-SAF-06-*	4.531 in. (115 mm)	3.530 in. (90 mm)	1.625 in. (41 mm)	0.188 in. (4.8 mm)	0.31 lbs.
H7	HS-SAF-07-*	5.938 in. (151 mm)	4.812 in. (122 mm)	1.125 in. (29 mm)	0.188 in. (4.8 mm)	0.58 lbs.
H8	HS-SAF-08-*	8.000 in. (203 mm)	1.313 in. (33 mm)	2.938 in. (75 mm)	0.375 in. (9.5 mm)	1.43 lbs.
H9	HS-SAF-09-*	9.750 in. (248 mm)	1.750 in. (44 mm)	3.438 in. (87 mm)	0.375 in. (9.5 mm)	2.17 lbs.
H10	HS-SAF-10-*	12.438 in. (316 mm)	1.906 in. (48 mm)	4.438 in. (113 mm)	0.250 in. (6.3 mm)	0.00 lbs.

*Materials:	C	Unplated Carbon Steel (Standard Material)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	Z	Zinc Plated Steel (Special Order)

Rail Nuts and Rail Selection and Dimensions

Rail Nut [RCN]

The rail nuts allow mounting of the heavy series clamps to the RAL-4 Heavy series rail.

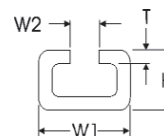


Group	Order Number	ØD1	ØD2	H1	H2	H3	UNC Thread	Metric Thread
H3-H5	HS-RCN-99-*-RN7	0.698 in. (17.8 mm)	0.750 in. (19 mm)	0.750 in. (19 mm)	0.297 in. (7.6 mm)	0.219 in. (5.6 mm)	3/8 - 16 UNC	M10
H6	HS-RCN-99-*-RN8	0.778 in. (19.8 mm)	0.875 in. (22.2 mm)	0.813 in. (20.7 mm)	0.359 in. (9.1 mm)	0.219 in. (5.6 mm)	7/16 - 14 UNC	M12
H7	HS-RCN-99-*-RN9	0.938 in. (23.8 mm)	1.125 in. (28.6 mm)	1.700 in. (43.2 mm)	1.075 in. (27.3 mm)	0.375 in. (9.5 mm)	5/8 - 11 UNC	M16
H8-H10	N/A	-	-	-	-	-	-	-

*Materials:	C	Unplated Carbon Steel (Standard Material)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	Z	Zinc Plated Steel (Special Order)

Mounting Rail [RAL-4] DIN 3015-2

Behringer's Heavy series RAL-4 is used to mount clamps with heavy rail nuts. This allows clamps from multiple groups to be mounted to the same rail. The RAL-4 conforms to the DIN 3015-2 specification.



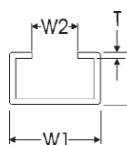
Group	Order Number	W1	W2	L	T	H
H3-H7	HS-RA4-99-*-xxx	1.563 in. (40 mm)	0.469 in. (12 mm)	See Below	0.188 in. (5 mm)	0.875 in. (22 mm)

*Materials:	C	Unplated Carbon Steel (Standard Material)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	Z	Zinc Plated Steel (Special Order)

xxx Length:	2ME	78 in. (2 m) Length (Standard Length)	14.5 lbs ea.
	1ME	39 in. (1 m) Length (Special Length)	7.25 lbs ea.
		Custom sizes available on request	

Mounting Rail [RAL-2]

Behringer's proprietary Heavy series RAL-2 is used to mount clamps with Weld Plates (SWP). The weld plate slides into the rail, eliminating the need for rail nuts. The RAL-2 fits Groups H3-H5 weld plates.



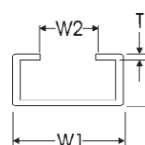
Group	Order Number	W1	W2	L	T	H
H3-H5	HS-RA2-99-*-xxx	1.750 in. (44.4 mm)	0.750 in. (19 mm)	See Below	0.125 in. (3 mm)	0.750 in. (19 mm)

*Materials:	C	Unplated Carbon Steel (Standard Material)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	Z	Zinc Plated Steel (Special Order)

xxx Length:	6FT	72 in. (1829 mm) Length (Standard Length)	8 lbs. each
	3 FT	36 in. (914 mm) Length (Special Length)	4 lbs. each
		Custom sizes available on request	

Mounting Rail [RAL-3]

Behringer's proprietary Heavy series RAL-3 is used to mount clamps with Weld Plates (SWP). The weld plate slides into the rail, eliminating the need for rail nuts. The RAL-3 fits Group H6 weld plates only.



Group	Order Number	W1	W2	L	T	H
H6	HS-RA3-99-*-xxx	2.125 in. (54 mm)	1.000 in. (25.4 mm)	See Below	0.125 in. (3 mm)	0.813 in. (20.7 mm)

*Materials:	C	Unplated Carbon Steel (Standard Material)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	Z	Zinc Plated Steel (Special Order)

xxx Length:	6FT	72 in. (1829 mm) Length (Standard Length)	9.6 lbs. ea.
	3 FT	36 in. (914 mm) Length (Special Length)	4.8 lbs. ea.
		Custom sizes available on request	

Chart 1 Chart 2 Chart 3 Chart 4 Chart 5
SH T 61900 - PP - MET

①	Clamp Configuration
SH	Single Heavy Complete Clamp for Weld Mounting
DH	Double Heavy Complete Clamp for Weld Mounting
R7H	Complete Clamp for mounting to RAL-4 (H3-H5)
R8H	Complete Clamp for mounting to RAL-4 (H6)
R9H	Complete Clamp for mounting to RAL-4 (H7)
UH	Complete Clamp for mounting to Strut Channel
HSK	Heavy Stacking Kit

②	Hardware Materials
Omit	Untreated Carbon Steel
T	AISI 304 Stainless Steel (A2 - 1.4301/1.4305)
X	AISI 316/316Ti Stainless Steel (A4 - 1.4401/1.4571)
Z	Electro-Zinc Dichromate Plating

④	Clamp Pair Material
PP	Polypropylene
SP	Santoprene
AL	Aluminum

⑤	Threads
Omit	UNC Thread (Standard)
MET	Metric Thread

③	Clamp Group and Size				
Behringer Group	Pipe Size	Tube Size	Metric OD (mm)	Imperial OD (Inch)	Clamp Halves
H3		1/4	6.4	0.250	3025
		3/8	9.5	0.375	3038
	1/8		10.0	0.405	30405
		1/2	12.7	0.500	3050
	1/4		13.7	0.540	30540
		5/8	16.0	0.620	3062
	3/8		17.1	0.675	30675
H4		3/4	19.0	0.750	4075
			20.0	0.790	4079
	1/2		21.3	0.840	40840
		7/8	22.2	0.870	4087
		1	25.4	1.000	4100
	3/4		26.7	1.050	41050
H5			30.0	1.181	41181
		1 1/4	32.0	1.250	5125
	1		33.4	1.315	51315
		1 1/2	38.1	1.500	5150
	1 1/4		42.2	1.660	51660
H6	1		33.4	1.315	61315
	1 1/4		42.2	1.660	61660
		1 3/4	44.5	1.750	6175
	1 1/2		48.3	1.900	61900
		2	50.8	2.000	6200
		2 1/8	54.0	2.125	62125
		2 1/4	57.2	2.250	6225
	2		60.3	2.375	62375
		2 1/2	63.5	2.500	6250
		2 3/4	69.9	2.750	6275
H7		2 3/4	69.9	2.750	7275
	2 1/2			2.875	72875
		3	76.2	3.000	7300
	3	3 1/2	88.9	3.500	7350
H8	3	3 1/2	88.9	3.500	83500
		4		4.000	8400
	4	4 1/2		4.500	8450
		5		5.000	8500
H9		5		5.000	9500
		5 1/4		5.250	9525
	5			5.563	95563
		6		6.000	9600
H10	6			6.625	96625
		8		8.000	06625
	8			8.625	08625

Ordering Examples

SH

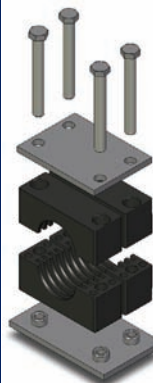
Single Complete Clamp for Weld Mounting



Consists of:
 2 HEX Bolts
 1 SCP Cover Plate
 1 CLH Clamp Set (2 halves)
 1 SWP Weld Plate

DH

Double Complete Clamp for Weld Mounting



Consists of:
 4 HEX Bolts
 1 DCP Cover Plate
 2 CLH Clamp Sets (4 halves)
 1 DWP Double Weld Plate

R7H R8H

Single Complete Clamp for Rail Mounting



Consists of:
 2 HEX Bolts
 1 SCP Cover Plate
 1 CLH Clamp Set (2 halves)
 2 RCN Rail Nuts

R9H

Single Complete Clamp for Rail Mounts Group H7 Only



Consists of:
 2 HEX Bolts
 1 SCP Cover Plate
 1 CLH Clamp Set (2 halves)
 1 SPL Spacer Plate
 2 RCN-9 Rail Nuts

HSK

Complete Stacking Kit



Consists of:
 2 STB Stacking Bolts
 1 SAF Safety Plate
 1 CLH Clamp Set (2 halves)

UH

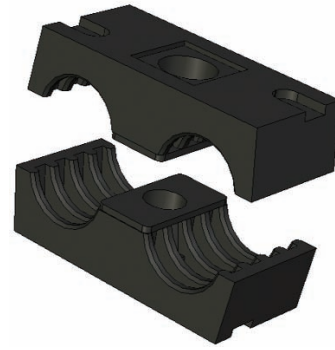
Single Complete Clamp for Strut Mounting



Consists of:
 2 HEX Bolts
 1 SCP Cover Plate
 1 CLH Clamp Set (2 halves)
 2 UCN Strut Nuts

Clamp Pair Selection

Behringer's clamp pairs are available in different materials and incorporate a modular insert by group size. Twin series pipe clamps are available in sizes from 1/4 in. (6.35 mm) through 1.66in. (42 mm) OD Sizes.



Clamp Pair Selection and Part Numbers

Behringer Group	Pipe Size	Tube Size	Metric OD (mm)	Imperial OD (Inch)	Clamp Halves (See material code for *)
T1		1/4	6.4	0.250	TS-CLH-01-*-025
		3/8	9.5	0.375	TS-CLH-01-*-038
			12.0	0.472	TS-CLH-01-*-047
T2		1/4	6.4	0.250	TS-CLH-02-*-025
		3/8	9.5	0.375	TS-CLH-02-*-038
		1/2	12.7	0.500	TS-CLH-02-*-050
	1/4		14.0	0.540	TS-CLH-02-*-054
		5/8	16.0	0.620	TS-CLH-02-*-062
T3		3/4	19.0	0.750	TS-CLH-03-*-075
	1/2		21.3	0.840	TS-CLH-03-*-084
		7/8	22.2	0.870	TS-CLH-03-*-087
		1	25.4	1.000	TS-CLH-03-*-100
T4		7/8	22.2	0.870	TS-CLH-04-*-087
		1	25.4	1.000	TS-CLH-04-*-100
	3/4		26.7	1.050	TS-CLH-04-*-105
		1 1/8	28.6	1.125	TS-CLH-04-*-112
T5		1 1/4	32.0	1.250	TS-CLH-05-*-125
	1		33.4	1.315	TS-CLH-05-*-132
		1 1/2	38.1	1.500	TS-CLH-05-*-150
	1 1/4		42.2	1.660	TS-CLH-05-*-166

Clamp Halves Material Codes (*)

P	[PP] Polypropylene Black Color
S	[SP] Santoprene Beige Color

Custom Sizes

Custom sizes can be made by specially boring the clamp pair to any desired size. To order a special size, first find the group that this will fall under. All groups are available starting with 1/4 in. OD and can be used up to the maximum OD size in the chart below. This is expressed in the part number as a two-digit number (G#) Once you have determined your group size, simply add the desired OD of the line to be secured in the 3 digit end number of the clamp pair (XXX) by rounding the number to two decimals and dropping the decimal point. The part number will look like this:

TS-CLH-G#-*-XXX

Example: For a line with OD of 1.08 in., this would fall within the group T4. The Part number will be as follows:

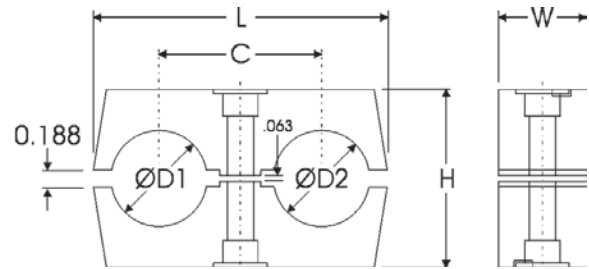
TS-CLH-04-*-108

Special Bore Range by Group

Group (G#)	Range
01	0.25 in through 0.472 in.
02	0.25 in through 0.675 in.
03	0.25 in through 1.000 in.
04	0.25 in through 1.125 in.
05	0.25 in through 1.660 in.

Clamp Pair Dimensions

Dimensions for the clamp pairs can be found at the right and in the chart below. As a general rule of thumb, the outside diameter of the line to be secured should not vary over or under the ØD dimension in the chart by more than ½ of the tension clearance dimension, or no more than 0.030 in. If an acceptable size is not available, custom sizes can be made to order.



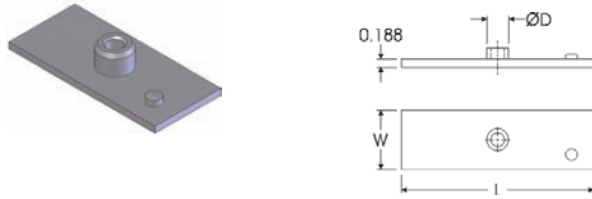
Clamp Pair Dimensional Information

Behringer Group	Metric ØD (mm)	Imperial ØD (Inch)	Clamp Halves (See page 1 for complete order numbers)	L	C	H	W	Weight Ea.
T1	6.4	0.250	TS-CLH-01*-025	1.406 in. (36 mm)	0.781 in. (20 mm)	0.781 in. (20 mm)	1.195 in. (30.4 mm)	0.02 lbs
	9.5	0.375	TS-CLH-01*-038					
	12.0	0.472	TS-CLH-01*-047					
T2	6.4	0.250	TS-CLH-02*-025	2.188 in. (56 mm)	1.250 in. (32 mm)	1.000 in. (25.4)	1.195 in. (30.4 mm)	0.03 lbs
	9.5	0.375	TS-CLH-02*-038					
	12.7	0.500	TS-CLH-02*-050					
	14.0	0.540	TS-CLH-02*-054					
T3	16.0	0.620	TS-CLH-02*-062	2.688 in. (68.3 mm)	1.438 in. (36.5 mm)	1.500 in. (38.1 mm)	1.195 in. (30.4 mm)	0.07 lbs
	19.0	0.750	TS-CLH-03*-075					
	21.3	0.840	TS-CLH-03*-084					
	22.2	0.870	TS-CLH-03*-087					
T4	25.4	1.000	TS-CLH-03*-100	3.188 in. (81 mm)	1.813 in. (46.1 mm)	1.750 in. (44.4 mm)	1.195 in. (30.4 mm)	0.09 lbs
	22.2	0.870	TS-CLH-04*-087					
	25.4	1.000	TS-CLH-04*-100					
	26.7	1.050	TS-CLH-04*-105					
T5	28.6	1.125	TS-CLH-04*-112	4.063 in. (103.2 mm)	2.188 in. (56 mm)	2.250 in. (57.1 mm)	1.195 in. (30.4 mm)	0.15 lbs
	32.0	1.250	TS-CLH-05*-125					
	33.4	1.315	TS-CLH-05*-132					
	38.1	1.500	TS-CLH-05*-150					
	42.2	1.660	TS-CLH-05*-166					

Hardware Selection and Dimensions

Twin Weld Plate [TWP]

The typical mounting configuration where the clamp is welded to the support structure.



Group	Order Number	L	W	ØD	Thread	Weight
T1	TS-TWP-01-*XXX	1.449 in. (37 mm)	1.188 in. (30 mm)	0.460 in. (12 mm)	1/4 - 20 UNC (M6 metric)	0.08 lbs
T2	TS-TWP-02-*XXX	2.188 in. (56 mm)	1.188 in. (30 mm)	0.550 in. (14 mm)	5/16 - 18 UNC (M8 metric)	0.14 lbs
T3	TS-TWP-03-*XXX	2.688 in. (68.3 mm)	1.188 in. (30 mm)	0.550 in. (14 mm)	5/16 - 18 UNC (M8 metric)	0.17 lbs
T4	TS-TWP-04-*XXX	3.188 in. (81 mm)	1.188 in. (30 mm)	0.550 in. (14 mm)	5/16 - 18 UNC (M8 metric)	0.2 lbs
T5	TS-TWP-05-*XXX	4.063 in. (103.2 mm)	1.188 in. (30 mm)	0.550 in. (14 mm)	5/16 - 18 UNC (M8 metric)	0.26 lbs

*Materials:	Z	Zinc Plated Steel (Standard Material)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	C	Unplated Carbon Steel (Special Order)
XXX Threads:	56H	5/16 - 18 UNC Thread (standard)
	38H	3/8 - 16 UNC Thread (special)
	-MET	By adding the "-MET" designation after the material designation above, the threads are metric thread

Twin Cover Plate [TCP]

The cover plate is the typical top fixture used to secure twin series pipe clamps.



Group	Order Number	L	W	H	Weight
T1	TS-TCP-01-*	1.225 in. (31 mm)	0.905 in. (23 mm)	-	0.05 lbs
T2	TS-TCP-02-*	2.040 in. (52 mm)	1.200 in. (30.5 mm)	0.266 in. (7 mm)	0.08lbs
T3	TS-TCP-03-*	2.542 in. (65 mm)	1.200 in. (30.5 mm)	0.266 in. (7 mm)	0.10 lbs
T4	TS-TCP-04-*	2.870 in. (73 mm)	1.205 in. (30.6 mm)	0.266 in. (7 mm)	0.11 lbs
T5	TS-TCP-05-*	3.688 in. (94 mm)	1.220 in. (31 mm)	0.266 in. (7 mm)	0.14 lbs

*Materials:	Z	Zinc Plated Steel (Standard Material)
	Y	Yellow Zinc Plated Steel
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	C	Unplated Carbon Steel (Special Order)

Twin Hex Bolts [HEX]

The Hexagon head bolts are used with clamps with cover plates



Group	Order Number	L	Thread	Weight
T1	TS-HEX-01-*XXX	1.00 in. (25.4 mm)	1/4 - 20 UNC (M6 metric)	0.02 lbs
T2	TS-HEX-02-*XXX	1.25 in. (32 mm)	5/16 - 18 UNC (M8 metric)	0.03 lbs
T3	TS-HEX-03-*XXX	1.75 in. (44 mm)	5/16 - 18 UNC (M8 metric)	0.04 lbs
T4	TS-HEX-04-*XXX	2.00 in. (50.8 mm)	5/16 - 18 UNC (M8 metric)	0.05 lbs
T5	TS-HEX-05-*XXX	2.50 in. (63 mm)	5/16 - 18 UNC (M8 metric)	0.06 lbs

*Materials:	Z	Zinc Plated Steel (Standard Material)
	Y	Yellow Zinc Plated Steel
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	C	Unplated Carbon Steel (Special Order)
XXX Threads:	56H	5/16 - 18 UNC Thread (standard)
	38H	3/8 - 16 UNC Thread (special)
	-MET	By adding the "-MET" designation after the material designation above, the threads are metric thread

Twin Stacking Bolt [STB]

The stacking bolt is used when another clamp module will be stacked on top of the existing bottom clamp. The head of the stacking bolt has a female thread for the next bolt on top to engage.



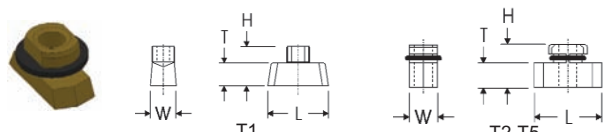
Group	Order Number	L1	L2	Thread	Weight
T1	N/A	-	-	-	-
T2	TS-STB-02-*XXX	0.625 in. (16 mm)	1.25 in. (32 mm)	5/16 - 18 UNC (M8 metric)	0.04 lbs
T3	TS-STB-03-*XXX	1.125 in. (29 mm)	1.75 in. (44 mm)	5/16 - 18 UNC (M8 metric)	0.05 lbs
T4	TS-STB-04-*XXX	1.375 in. (35 mm)	2.00 in. (50.8 mm)	5/16 - 18 UNC (M8 metric)	0.06 lbs
T5	TS-STB-05-*XXX	1.875 in. (48 mm)	2.50 in. (63 mm)	5/16 - 18 UNC (M8 metric)	0.06 lbs

*Materials:	Z	Zinc Plated Steel (Standard Material)
	Y	Yellow Zinc Plated Steel
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	C	Unplated Carbon Steel (Special Order)
XXX Threads:	56H	5/16 - 18 UNC Thread (standard)
	38H	3/8 - 16 UNC Thread (special)
	-MET	By adding the "-MET" designation after the material designation above, the threads are metric thread

Hardware Selection and Dimensions

Rail Nut [RCN-0]

The RCN-0 is for use when mounting Behringer's RAL-0, and competitor's standard rails.



Group	Order Number	L	W	T	Thread	Weight
T1	ST-RCN-99-*RN0	0.950 in. (24 mm)	0.405 in. (10.2 mm)	0.210 in. (5.3 mm)	1/4 - 20 UNC	0.02 lbs
T2-T5	TS-RCN-99-*RN0	1.000 in. (25.4 mm)	0.420 in. (10.7 mm)	0.210 in. (5.3 mm)	5/16 - 18 UNC	0.02 lbs

*Materials:	Y	Yellow Zinc Plated Steel (Standard Material Groups T2-T5)
	Z	Zinc Plated Steel (Group T1 as standard, special T2-T5)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	C	Unplated Carbon Steel (Standard Material Group T1)

Weight Ea. approx. 0.02 lbs each

Rail Nut [RCN-1/RCN-4]

The RCN-1 and RCN-4 are used only when mounting to Behringer's proprietary RAL-1



Group	Order Number	L	W	T	H	Thread
T1	ST-RCN-99-*RN1	1.075 in. (27.3 mm)	0.783 in. (20 mm)	0.175 in. (4.4 mm)	0.405 in. (10 mm)	1/4 - 20 UNC
T2-T5	TS-RCN-99-*RN4	1.075 in. (27.3 mm)	0.783 in. (20 mm)	0.175 in. (4.4 mm)	0.550 in. (14 mm)	5/16 - 18 UNC

*Materials:	Z	Zinc Plated Steel (Standard Material)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	C	Unplated Carbon Steel (Special order)

Weight Ea. Approx. 0.04 lbs.

Mounting Rail [RAL-0]

Behringer's RAL-0 can be used to mount clamps with RCN-0 rail nuts only.



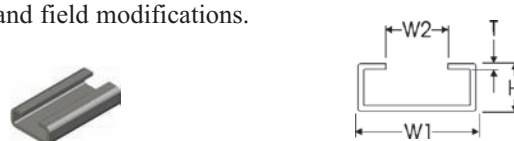
Group	Order Number	W1	W2	L	T	H
0-7A	ST-RA0-99-*xxx	1.125 in. (28mm)	0.438 in. (11 mm)	See Below	14 gauge	0.438 in. (11 mm)

*Materials:	Z	Zinc Plated Steel (Special Order)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	C	Unplated Carbon Steel (Standard Material)

xxx Length: 6FT 72 in. (1829 mm) Length (Standard Length)
3FT 36 in. (914 mm) Length (Special Length)
Custom sizes available on request

Mounting Rail [RAL-1]

Behringer's Proprietary RAL-1 can be used to mount both clamps with RCN-1 and RCN-4 rail nuts above as well as the TWP weld plates. This allows more flexibility of inventories and simplifies installation and field modifications.



Group	Order Number	W1	W2	L	T	H
0-7A	ST-RA1-99-*xxx	1.125 in. (28mm)	0.438 in. (11 mm)	See Below	14 gauge	0.438 in. (11 mm)

*Materials:	Z	Zinc Plated Steel (Standard Material)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	C	Unplated Carbon Steel (Special Order)

xxx Length: 6FT 72 in. (1829 mm) Length (Standard Length)
3FT 36 in. (914 mm) Length (Special Length)
Custom sizes available on request

Safety Plate [SAF]

The safety plate is used in conjunction with the STB stacking bolts. This ensures that the stacking bolts will remain locked in place when tightening the clamp module stacked above it.

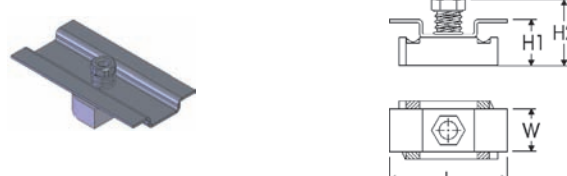


Group	Order Number	W	B	T	Weight
T1	N/A	-	-	-	-
T2 - T5	TS-SAF-02-*	0.719 in. (18 mm)	0.510 in. (13 mm)	0.105 in. (2.7 mm)	0.1 oz.

*Materials:	Z	Zinc Plated Steel (Standard Material)
	Y	Yellow Zinc Plated Steel
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	C	Unplated Carbon Steel (Special Order)

Unistrut Clip Nut [UCN]

The UCN nut is used to adapt Behringer's pipe clamps to standard strut. This allows for even greater flexibility and mounting possibilities.



Group	Order Number	L	W	H1	H2	Thread
T1	ST-UCN-99-*	1.660 in. (42 mm)	0.635 in. (16 mm)	0.525 in. (13 mm)	0.813 in. (20.5 mm)	1/4 - 20 UNC
T2-T5	TS-UCN-23-2	1.500 in. (38 mm)	2.090 in. (53 mm)	0.730 in. (18.5 mm)	1.080 in. (27.5 mm)	5/18 - 18 UNC
T4-T5	TS-UCN-45-2	1.500 in. (38 mm)	3.150 in. (80 mm)	0.730 in. (18.5 mm)	1.080 in. (27.5 mm)	5/18 - 18 UNC

*Materials:	Z	Zinc Plated Steel (Standard Material)
	T	AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
	X	AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
	C	Unplated Carbon Steel (Special Order)

Chart 1 Chart 2 Chart 3 Chart 4 Chart 5
TW T 5150 - PP - MET

① Clamp Configuration

TW	Complete Clamp for Weld Mounting
R0T	Complete Clamp for mounting to RAL-0
R1T/ R4T	Complete Clamp for mounting to RAL-1
UT	Complete Clamp for mounting to Strut Channel
TWSK	Stacking Kit

② Hardware Materials

Omit	Electro-Zinc Dichromate Plating RCN-0 rail nuts are still supplied as untreated carbon steel. Zinc plating available for these parts on request.
T	AISI 304 Stainless Steel (A2 - 1.4301/1.4305)
X	AISI 316/316Ti Stainless Steel (A4 - 1.4401/1.4571)
C	Untreated Carbon Steel

④ Clamp Pair Material

PP	Polypropylene
SP	Santoprene

⑤ Threads

Omit	UNC Thread (Standard)
MET	Metric Thread

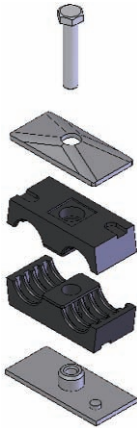
③ Clamp Group and Size

Behringer Group	Pipe Size	Tube Size	Metric OD (mm)	Imperial OD (Inch)	Clamp Halves (Set of 2)
T1		1/4	6.4	0.250	1025
		3/8	9.5	0.375	1038
			12.0	0.472	10472
T2		1/4	6.4	0.250	2025
		3/8	9.5	0.375	2038
	1/8		10.0	0.405	20405
		1/2	12.7	0.500	2050
	1/4		14.0	0.540	20540
		5/8	16.0	0.620	2062
T3		3/4	19.0	0.750	3075
	1/2		21.3	0.840	30840
		7/8	22.2	0.870	3087
		1	25.4	1.000	3100
T4		7/8	22.2	0.870	4087
		1	25.4	1.000	4100
	3/4		26.7	1.050	41050
		1 1/8	28.6	1.125	41125
T5		1 1/4	32.0	1.250	5125
	1		33.4	1.315	51315
		1 1/2	38.1	1.500	5150
	1 1/4		42.2	1.660	51660

Ordering Examples

TW

Complete Clamp for Weld Mounting



Consists of:
1 HEX Bolts
1 TCP Cover Plate
1 CLH Clamp Set (2 halves)
1 TWP Weld Plate

UT

Complete Clamp for Strut Mounting



Consists of:
1 HEX Bolts
1 TCP Cover Plate
1 CLH Clamp Set (2 halves)
1 UCN Unistrut Clip

R0T

Complete Clamp for RAL-0 Mounting



Consists of:
1 HEX Bolts
1 TCP Cover Plate
1 CLH Clamp Set (2 halves)
2 RCN-0 Rail Nut

R1T
R4T

Complete Clamp for Ral-1 Mounting



Consists of:
1 HEX Bolts
1 TCP Cover Plate
1 CLH Clamp Set (2 halves)
1 RCN-4 Rail Nut

TWSK

Stacking Kit



Consists of:
1 SAF Cover Plate
1 STB Stacking Bolt
1 CLH Clamp Set (2 halves)

Cushioned Clamping System

Behringer now offers a complete line of cushioned clamps. Cushioned clamps are typically used in pneumatic refrigeration, HVAC, and some low pressure hydraulic lines. Behringer's cushioned clamps also eliminate metal to metal contact between the fluid lines and the support hardware. Standard material for the hardware is a clear trivalent zinc-plated steel, with options for both 304 and 316 grades stainless steel. Additional special options include aluminum and powder coating.

Specifications

Hardware:

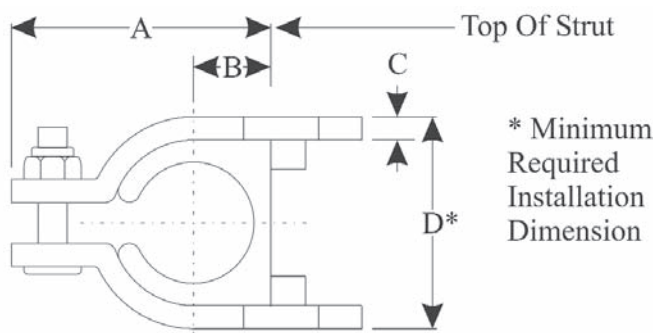
Zinc-Plated Carbon Steel (standard)
AISI 304 (A2 - 1.1.4301 / 1.4305)
AISI 316 (A2 - 1.1.4401 / 1.4571)

Cushion:

Thermoplastic Elastomer
-65°F to 275°F operating temperature

Required Channel:

Fits industry standard strut channel
with 1 - 5/8 in. Width.



Ordering

Order Number Material

CC _____ - _____

Hardware Materials

Z	Electro-Zinc Dichromate Plating
T	AISI 304 Stainless Steel (A2 - 1.4301/1.4305)
X	AISI 316/316Ti Stainless Steel (A4-1.4401/1.4571)

To order, use the ordering code above. Fill in the order number from the light blue shaded boxes in the chart to the right. Then add the material designation from the Hardware Materials chart above.

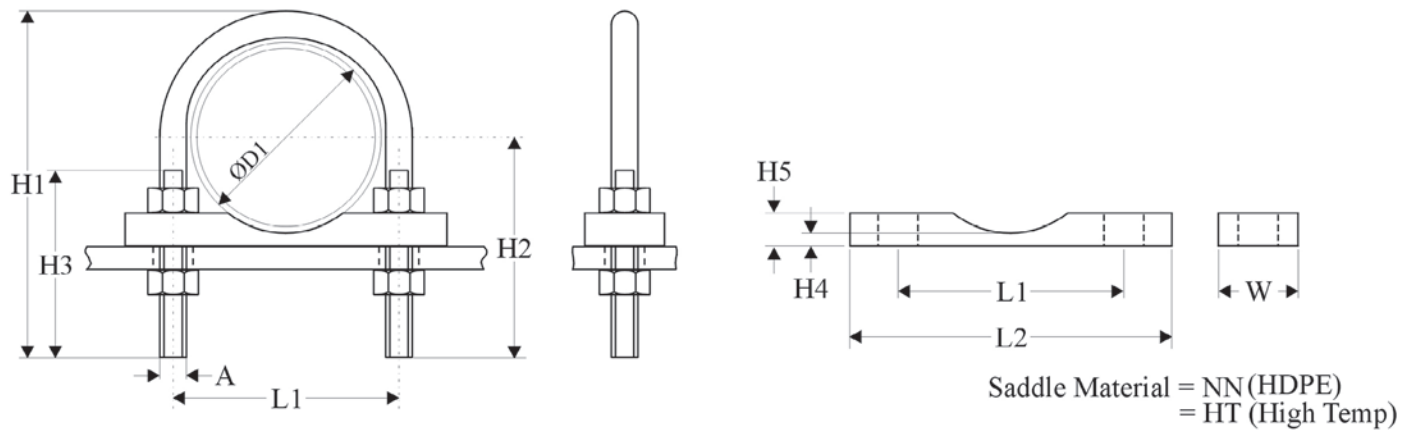
Ex. For 1 in. Pipe with zinc-plated hardware, you would order CC1315-Z.



Cushion Clamp Size Table

Size	Order Number	OD	A	B	C	D*	Box Quantity
1/4 T	0250	0.250	1.110	0.220	0.075	0.620	24
3/8 T	0375	0.375	1.240	0.280	0.075	0.750	24
1/2 T	0500	0.500	1.360	0.340	0.075	0.870	24
1/4 P	0540	0.540	1.410	0.630	0.075	0.910	24
5/8 T	0625	0.625	1.500	0.410	0.075	1.000	24
3/8 P	0675	0.675	1.590	0.450	0.075	1.070	24
3/4 T	0750	0.750	1.780	0.530	0.075	1.330	24
1/2 P	0840	0.840	1.910	0.590	0.075	1.450	24
7/8 T	0875	0.875	1.910	0.580	0.075	1.450	24
1 T	1000	1.000	2.030	0.660	0.105	1.660	12
3/4 P	1050	1.050	2.160	0.720	0.105	1.790	12
1 1/8 T	1125	1.125	2.160	0.720	0.105	1.790	12
1 1/4 T	1250	1.250	2.300	0.780	0.105	1.920	12
1 P	1315	1.315	2.750	0.910	0.119	2.220	12
1 3/8 T	1375	1.375	2.750	0.910	0.119	2.220	12
1 1/2 T	1500	1.500	2.750	0.910	0.119	2.220	12
1 5/8 T	1625	1.625	3.030	1.030	0.119	2.470	12
1 1/4 P	1660	1.660	3.030	1.030	0.119	2.470	12
1 3/4 T	1750	1.750	3.030	1.030	0.119	2.470	12
1 7/8 T	1875	1.875	3.280	1.160	0.119	2.470	12
1 1/2 P	1900	1.900	3.280	1.160	0.119	2.470	12
2 T	2000	2.000	3.280	1.160	0.119	2.470	12
1 1/8 T	2125	2.125	3.530	1.280	0.119	2.970	1
2 1/4 T	2250	2.250	3.780	1.410	0.119	3.220	1
2 3/8 T	2375	2.375	3.780	1.410	0.119	3.220	1
2 P	2375	2.375	3.780	1.410	0.119	3.220	1
2 1/2 T	2500	2.500	4.030	1.530	0.119	3.470	1
2 5/8 T	2625	2.625	4.030	1.530	0.119	3.470	1
2 1/2 P	2875	2.875	4.270	1.660	0.119	3.720	1
3 T	3000	3.000	4.520	1.780	0.119	3.970	1
3 1/8 T	3125	3.125	4.520	1.780	0.119	3.970	1
3 P	3500	3.500	4.910	1.970	0.119	4.360	1
3 5/8 T	3625	3.625	5.030	2.030	0.119	4.470	1
3 1/2 P	4000	4.000	5.530	2.280	0.119	4.970	1
4 1/8 T	4125	4.125	5.660	2.340	0.119	5.090	1
4 P	4500	4.500	6.030	2.530	0.119	5.470	1
5 P	5563	5.563	7.030	3.030	0.119	6.470	1
6 P	6625	6.625	8.030	3.530	0.119	7.470	1

Long Saddle U-Bolt Clamp



U-Bolt							Long Saddle				
Nominal Pipe Size	ØD1 (pipe OD)	L1	H1	H2	H3	A (thread)	L1	L2	W	H4	H5
1/2	0.840	1.188	3.500	2.750	2.375	1/4 - 20 UNC	1.188	2.000	1.250	0.250	0.500
3/4	1.050	1.375	3.563	2.750	2.375	1/4 - 20 UNC	1.375	3.000	1.250	0.250	0.500
1	1.315	1.625	3.688	2.750	2.375	1/4 - 20 UNC	1.625	3.188	1.250	0.250	0.500
1 1/4	1.660	2.063	4.125	2.875	2.375	3/8 - 16 UNC	2.063	3.500	1.250	0.250	0.500
1 1/2	1.900	2.375	4.378	3.000	2.500	3/8 - 16 UNC	2.375	3.750	1.500	0.313	0.625
2	2.375	2.813	4.875	3.250	2.500	3/8 - 16 UNC	2.813	4.375	1.500	0.313	0.625
2 1/2	2.875	3.438	5.75	3.750	3.000	1/2 - 13 UNC	3.438	5.375	1.500	0.313	0.625
3	3.500	4.063	6.313	4.000	3.000	1/2 - 13 UNC	4.063	5.750	1.500	0.375	0.750
4	4.500	5.063	7.313	4.500	3.000	1/2 - 13 UNC	5.063	7.500	1.500	0.375	0.750
5	5.563	6.125	8.313	5.000	3.000	1/2 - 13 UNC	6.125	8.750	1.500	0.375	0.750
6	6.625	7.375	10.125	6.125	3.750	5/8 - 11 UNC	7.375	9.875	2.000	0.500	1.000
8	8.625	9.375	21.125	7.125	3.750	5/8 - 11 UNC	9.375	12.500	2.000	0.500	1.000
10	10.750	11.625	14.563	8.375	4.000	3/4 - 10 UNC	11.625	14.625	2.000	0.500	1.000
12	12.750	13.750	16.938	9.625	4.250	7/8 - 9 UNC	13.750	16.625	2.500	0.594	1.250
14	14.000	15.000	18.188	10.250	4.250	7/8 - 9 UNC	15.000	19.000	2.500	0.594	1.250
16	16.000	17.000	20.188	11.250	4.250	7/8 - 9 UNC	17.000	21.250	2.500	0.594	1.250
18	18.000	19.125	22.688	12.625	4.750	1 - 8 UNC	19.125	23.240	2.500	0.594	1.250
20	20.000	21.125	24.688	13.625	4.750	1 - 8 UNC	21.125	25.250	2.500	0.594	1.250
22	22.000	23.125	26.688	14.625	4.750	1 - 8 UNC	23.125	27.625	2.750	0.750	1.500
24	24.000	25.125	28.688	15.625	4.750	1 - 8 UNC	25.125	29.625	2.750	0.750	1.500
28	28.000	29.125		17.625	4.750	1 - 8 UNC	29.125	34.250	2.750	0.750	1.500
30	30.000	31.125		18.625	4.750	1 - 8 UNC	31.125	36.000	2.750	0.750	1.500

Assembly Ordering

LSUBC-12750-NN

Saddle Material
NN = HDPE
HT = High Temp

Pipe Diameter
Enter ØD1 value from above, excluding decimal

Material of U-Bolt
C Carbon Steel
Z Zinc Plated
T 304 Stainless Steel
X 316 Stainless Steel

U-Bolt Ordering

UBC-12750

Pipe Diameter
Enter ØD1 value from above, excluding decimal

Material of U-Bolt
C Carbon Steel
Z Zinc Plated
T 304 Stainless Steel
X 316 Stainless Steel

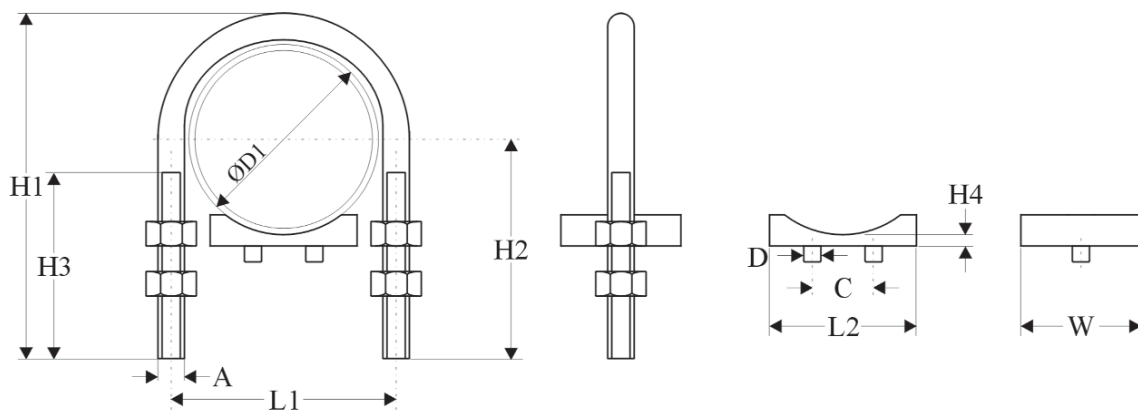
Saddle Ordering

LS-12750-NN

Saddle Material
NN = HDPE
HT = High Temp

Pipe Diameter
Enter ØD1 value from above, excluding decimal

Short Saddle U-Bolt Clamp



Saddle Material = PP (Polypropylene)

U-Bolt						Short Saddle					
Nominal Pipe Size	ØD1 (pipe OD)	L1	H1	H2	H3	A (thread)	L2	C	D	H4	W
1 1/4	1.660	2.063	4.125	2.875	2.375	3/8 - 16 UNC	1.500	1.000	0.313	0.250	1.000
1 1/2	1.900	2.375	4.378	3.000	2.500	3/8 - 16 UNC	1.500	1.000	0.313	0.250	1.000
2	2.375	2.813	4.875	3.250	2.500	3/8 - 16 UNC	1.500	1.000	0.313	0.250	1.000
3	3.500	4.063	6.313	4.000	3.000	1/2 - 13 UNC	3.000	1.563	0.563	0.313	2.000
4	4.500	5.063	7.313	4.500	3.000	1/2 - 13 UNC	3.000	1.563	0.563	0.313	2.000
6	6.625	7.375	10.125	6.125	3.750	5/8 - 11 UNC	5.500	3.500	1.000	0.375	3.000
8	8.625	9.375	21.125	7.125	3.750	5/8 - 11 UNC	5.500	3.500	1.000	0.375	3.000
10	10.750	11.625	14.563	8.375	4.000	3/4 - 10 UNC	5.500	3.500	1.000	0.375	3.000
12	12.750	13.750	16.938	9.625	4.250	7/8 - 9 UNC	8.500	5.875	1.125	0.375	3.000
14	14.000	15.000	18.188	10.250	4.250	7/8 - 9 UNC	8.500	5.875	1.125	0.375	3.000
16	16.000	17.000	20.188	11.250	4.250	7/8 - 9 UNC	8.500	5.875	1.125	0.375	3.000
18	18.000	19.125	22.688	12.625	4.750	1 - 8 UNC	8.500	5.875	1.125	0.375	3.000
20	20.000	21.125	24.688	13.625	4.750	1 - 8 UNC	14.000	10.500	1.125	0.500	4.000
24	24.000	25.125	28.688	15.625	4.750	1 - 8 UNC	14.000	10.500	1.125	0.500	4.000
30	30.000	31.125		18.625	4.750	1 - 8 UNC	14.000	10.500	1.125	0.500	4.000

Assembly Ordering

SSUBC-12750 -PP

Pipe Diameter

Enter ØD1 value from above, excluding decimal

Material of U-Bolt

- C Carbon Steel
- Z Zinc Plated
- T 304 Stainless Steel
- X 316 Stainless Steel

U-Bolt Ordering

UBC-12750

Pipe Diameter

Enter ØD1 value from above, excluding decimal

Material of U-Bolt

- C Carbon Steel
- Z Zinc Plated
- T 304 Stainless Steel
- X 316 Stainless Steel

Saddle Ordering

SS-12750 -PP

Pipe Diameter

Enter ØD1 value from above, excluding decimal

Materials Properties Technical Data

Clamp Pair Materials Other materials have been used and are available upon request.	PP	SP	AL	NN
	Polypropylene	Santoprene	Aluminum	HDPE
Color	Black	Tan	Natural Aluminum	White
Description	Thermoplastic Copolymer	Thermoplastic Elastomer	AlSi12	High Density Polyethylene
Mechanical Properties				
Tensile Strength	3300 psi (at yield, 73 ° F) (ASTM D638)	1740 psi (at yield, 73 ° F) (ASTM D638)	19,000 psi (at yield, 73 ° F) (ASTM D638)	4500 psi (at yield, 73 ° F) (ASTM D638)
Tensile Elongation	6.6% (at yield, 73 ° F) (ASTM D638)	31% (at yield, 73 ° F) (ASTM D638)	3.5% (at yield, 73 ° F) (ASTM D638)	
Hardness		50 Shore D (ASTM D2240)		65 R (Rockwell "R" Scale)
Thermal Properties				
Temperature Range (Brief Exposure)	-22° F to + 215° F (-30° C to + 102° C)	-40° F to + 302° F (-40° C to + 150° C)	-65° F to + 750° F* ¹ (-54° C to + 399° C)	
Temperature Range (Continuous Exposure)	-22° F to + 194° F (-30° C to + 90° C)	-40° F to + 275° F (-40° C to + 135° C)	-65° F to + 500° F* ¹ (-54° C to + 260° C)	-58° F to + 175° F (-50° C to + 79° C)
Electrical Properties				
Dielectric Strength	475 V/mil (ASTM D149)	920 V/mil (ASTM D149)		510 V/mil (ASTM D149)
Dielectric Constant	2.26 - 2.36 (ASTM D150)	2.300 (ASTM D150)		2.35 (ASTM D150)
Volume Resistivity	> 2 x 10 ¹⁶ ohm-cm (ASTM D257)	>1 x 10 ¹⁴ ohm-cm (ASTM D257)	4.4 x 10 ⁶ ohm-cm (ASTM D257)	>6 x 10 ¹⁵ ohm-cm (ASTM D257)
Standards and Specifications				
	FDA Regulation Title 21 CFR 177.1520	UL Listed File# QMFZ2.E80017		FDA Regulation Title 21 CFR 177.1520
	Meets Multiple Automotive Industry Specifications	Meets Multiple Automotive Industry Specifications		ASTM D 1248-84 Type III, Class A
	EU Directive 2002/95/EC (RoHS) Compliant	EU Directive 2002/95/EC (RoHS) Compliant		Federal Specificaion LP-390 Type III, Class H, Grade I

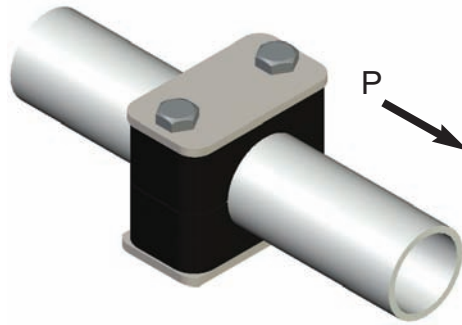
Special Notes

Notes:

*1: Tensile and fatigue strenght rise as temperature decreases. The tensile elongation decreases as the temperature decreases.

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Tightening Torques and Maximum Loads



Standard Series

Behringer Group	Hexagon Head Bolt	Polypropylene		Santoprene		Aluminum	
		Tightening Torque (Ft-lbs.)	Maximum load (lbs.) in pipe direction (P)	Tightening Torque (Ft-lbs.)	Maximum load (lbs.) in pipe direction (P)	Tightening Torque (Ft-lbs.)	Maximum load (lbs.) in pipe direction (P)
0	1/4 - 20 UNC	6	135	6	135	9	785
1		6	245	6	225	9	945
2		6	290	6	270	9	965
3		6	315	6	290	9	1100
4		6	335	6	315	9	1125
5		6	425	6	380	9	1600
6		6	450	6	405	9	2000
7		6	495	6	425	9	N/A
7A		6		6		9	N/A

Heavy Series

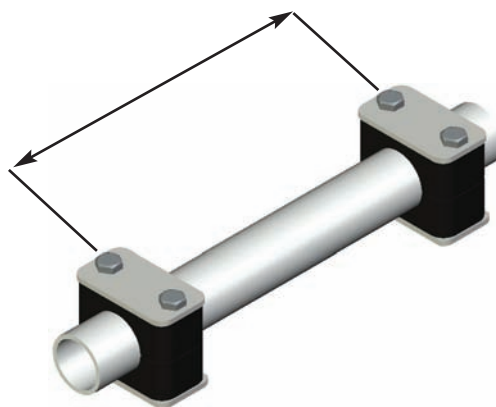
Behringer Group	Hexagon Head Bolt	Polypropylene		Santoprene		Aluminum	
		Tightening Torque (Ft-lbs.)	Maximum load (lbs.) in pipe direction (P)	Tightening Torque (Ft-lbs.)	Maximum load (lbs.) in pipe direction (P)	Tightening Torque (Ft-lbs.)	Maximum load (lbs.) in pipe direction (P)
H3	3/8 - 16 UNC	9	360	9	335	22	2720
H4		9	650	9	600	22	3395
H5		11	740	11	675	25	3485
H6	7/16 - 14 UNC	22	1845	22	1755	40	6615
H7	5/8 - 11 UNC	33	2475	33	2025	90	7850
H8	3/4 - 10 UNC	60	3150	60	2700	160	15,885
H9	7/8 - 9 UNC	80	6300	80	5625	180	16,875
H10	1 1/8 - 7 UNC	130	9000	130	7650	370	19,000

Twin Series

Behringer Group	Hexagon Head Bolt	Polypropylene		Santoprene	
		Tightening Torque (Ft-lbs.)	Maximum load (lbs.) in pipe direction (P)	Tightening Torque (Ft-lbs.)	Maximum load (lbs.) in pipe direction (P)
T1	1/4 - 20 UNC	4	100	4	100
T2	5/16 - 18 UNC	9	235	9	235
T3		9	235	9	235
T4		9	300	12	300
T5		6	300	6	300

* Disclaimer: Torque & Load values determined under laboratory conditions. Actual operating conditions may differ.
All torque and load values are in accordance with DIN 3015-10

Recommended Spacing



Recommended Spacing

Pipe or Tube OD	Operating Pressure	Recommended Spacing	Operating Pressure	Recommended Spacing
0.250 in. to 0.675 in.	up to 3000 psi	5 - 7 Ft.	over 3000 psi	3 - 5 Ft.
0.750 in. to 1.050 in.	up to 3000 psi	6 - 8 Ft.	over 3000 psi	4 - 6 Ft.
1.125 in. to 1.500 in.	up to 3000 psi	7 - 9 Ft.	over 3000 psi	5 - 7 Ft.
1.750 in. to 2.500 in.	up to 3000 psi	8 - 10 Ft.	over 3000 psi	6 - 8 Ft.
2.750 in. to 3.500 in.	up to 3000 psi	9 - 11 Ft.	over 3000 psi	7 - 9 Ft.
4.000 in. to 4.500 in.	up to 3000 psi	10 - 12 Ft.	over 3000 psi	8 - 10 Ft.
5.563 in. to 6.625 in.	up to 3000 psi	11 - 13 Ft.	over 3000 psi	8 - 11 Ft.
6.625 in. to 8.625 in.	up to 3000 psi	12 - 14 Ft.	over 3000 psi	9 - 11 Ft.
10.750 in. to 12.750 in.	up to 3000 psi	13 - 15 Ft.	over 3000 psi	8 - 10 Ft.
13.750 in. to 19.750 in.	up to 3000 psi	14 - 16 Ft.	over 3000 psi	10 - 12 Ft.

Recommended Mounting Practices

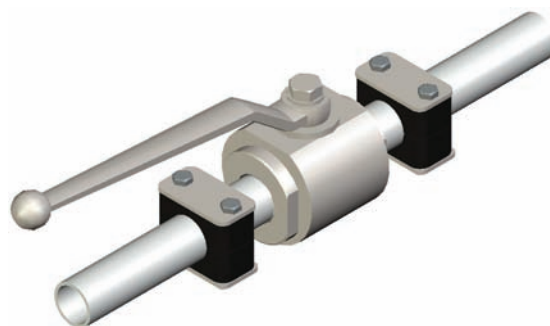
Bends

Behringer recommends that all pipe bends be supported by clamps placed as close to the bend as possible. The clamps should be directly after the connection (coupler, threaded connector, flange, or other).



Components

Behringer recommends that all system components are supported by a clamp directly before and after the component in order to protect against vibrations and shock. Clamps should be located as close to the component as possible.



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